HNF-EP-0182-140

Waste Tank Summary Report for Month Ending November 30, 1999

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

HNF-EP-0182-140

Waste Tank Summary Report for Month Ending November 30, 1999

B. M. Hanlon
CH2M Hill

Date Published
January 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.

P. O. Box 1500
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

RELEASE AUTHORIZATION

Document Number:	HNF-EP-0182-140
Document Title:	WASTE TANK SUMMARY REPORT FOR MONTH ENDING NOVEMBER 30, 1999

This document, reviewed in accordance with DOE Order 241.1, "Scientific and Technical Information Management," and 241.1-1, "Guide to the Management of Scientific and Technical Information," does not contain classified or sensitive unclassified information and is:

APPROVED FOR PUBLIC RELEASE

1/19/00

Mark A. Williams

Lockheed Martin Services, Inc.
Document Control/Information Clearance

Reviewed for Applied Technology, Business Sensitive, Classified, Copyrighted, Export Controlled, Patent, Personal/Private, Proprietary, Protected CRADA, Trademark, Unclassified Controlled Nuclear Information.

RELEASE AUTHORIZATION

APPROVALS

Prepared by: B. M. Hanlon — Date: 1/5/00

Responsible Manager: C. DeFigh-Price, Manager, Process Engineering — Date: 1-18-00

This page intentionally left blank.

WASTE TANK SUMMARY REPORT

B. M. Hanlon

ABSTRACT

This report is the official inventory for radioactive waste stored in underground tanks in the 200 Areas at the Hanford Site. Data that depict the status of stored radioactive waste and tank vessel integrity are contained within the report. This report provides data on each of the existing 177 large underground waste storage tanks and 63 smaller miscellaneous underground storage tanks and special surveillance facilities, and supplemental information regarding tank surveillance anomalies and ongoing investigations. This report is intended to meet the requirement of U. S. Department of Energy-Richland Operations Office Order 435.1 (DOE-RL, July 1999, Radioactive Waste Management, U. S. Department of Energy-Richland Operations Office, Richland, Washington) requiring the reporting of waste inventories and space utilization for Hanford Tank Farm tanks.

This page intentionally left blank.

CONTENTS

METRIC CONVERSION CHART		
1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 gallon	=	3.80 liters
1 ton	=	0.90 metric tons
$°F = \left(\frac{9}{5} °C\right) + 32$		
1 Btu/h = 2.930711 E-01 watts (International Table)		

WASTE TANK SUMMARY REPORT
FOR MONTH ENDING NOVEMBER 30, 1999

Note: Changes from the previous month are in bold print.

I. WASTE TANK STATUS

Category	Quantity	Date of Last Change
Double-Shell Tanks[b]	28 double-shell	10/86
Single-Shell Tanks	149 single-shell	1966
Assumed Leaker Tanks	67 single-shell	07/93
Sound Tanks	28 double-shell 82 single-shell	1986 07/93
Interim Stabilized Tanks[a]	**120 single-shell**	**11/99**
Not Interim Stabilized[c]	**29 single-shell**	**11/99**
Intrusion Prevention Completed	108 single-shell	09/96
Controlled, Clean, and Stable[f]	36 single-shell	09/96
Watch List Tanks[d] Total	22 single-shell 6 double-shell 28 tanks	12/98[e] 06/93

[a] Of the 120 tanks classified as Interim Stabilized, 64 are listed as Assumed Leakers. (See Table I-1)

[b] Six double-shell tanks are currently included on the Hydrogen Watch List and are thus prohibited from receiving waste in accordance with "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510.

[c] Three of these tanks are Assumed Leakers (BY-105, BY-106, SX-104). (See Table H-1)

[d] See Section A tables for more information on Watch List Tanks.

[e] Dates for the Watch List tanks are "officially added to or removed from the Watch List" dates. Eighteen tanks were removed from the Organics Watch List in December 1998; two tanks still remain on this watch list.

[f] The TY tank farm was officially declared Controlled, Clean, and Stable (CCS) in March 1996. The TX tank farm and BX tank farms were declared CCS in September 1996.

II. WASTE TANK INVESTIGATIONS

This section includes all single- or double-shell tanks or catch tanks which are showing surface level or interstitial liquid level (ILL) decreases, or drywell radiation level increases in excess of established criteria.

A. Assumed Leakers or Assumed Re-leakers: (See Appendix C for definition of "Re-leaker")

This section includes all single- or double-shell tanks or catch tanks for which an off-normal or unusual occurrence report has been issued, or for which a waste tank investigation is in progress, for assumed leaks or re-leaks.

Tanks/catch tanks will remain on this list until either a) completion of Interim Stabilization, b) the updated occurrence report indicates that the tank/catch tank is not an assumed leaker, or c) the investigation is completed.

There are no formal leak investigations in progress. There are no tanks for which an off-normal or unusual occurrence report has been issued for assumed leaks or re-leaks.

B. Tanks with increases indicating possible intrusions:

This section includes all single-shell tanks and related receiver tanks for which the surveillance data show that the surface level or ILL has met or exceeded the increase criteria, or are still being investigated.

Candidate Intrusion List: Increase criteria in the following tanks indicate possible intrusions.

Tank 241-B-202
Tank 241-BX-101
Tank 241-BX-103
Tank 241-BY-103

The surveillance data was last reviewed on the tanks listed as having probable liquid intrusions. (Ref: Memo 74B20-99-045, dated November 22, 1999.)

Catch Tank 241-AX-152: The liquid level in this catch tank was steady around 66.75 inches from the startup of Project W-030, Tank Farm Ventilation System," in March 1998 until late August 1998. The level then began to decrease. The October 1998 reading of 65 inches is 1.75 inches below the summer average. This is an active catch tank, routinely pumped, and deviations from baseline are not applicable per OSD-00031. The decrease represents a significant change in trend and it is apparent that tank conditions changed around the end of August 1998.

Resolution Status: Discrepancy Report #98-853 was issued on November 4, 1998. One possible cause under investigation is a change in flow path, causing an increase in evaporation. The tank was pumped down to 2.25 inches on November 13, 1998. Since that time the level has decreased to 0.00 inches. The Discrepancy Report will remain open and catch tank AX-152 will remain on the alert list until an engineering investigation is complete. Preparation of Work Package ES-99-00133 to perform an airflow rate assessment in the tank is continuing. There are still issues to be resolved before the preparation of this Work Package can be completed.

III. SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS

1. Single-Shell Tank Interim Stabilization

Tank 241-T-104 - **This tank was Interim Stabilized on November 19, 1999. Final Solids volume 316.8 Kgallons (Sludge, no Saltcake), Supernate 0 Kgallons (per video), DIL 31.2 Kgallons, DLR 31.2 Kgallons, PLR 26.9 Kgallons. See Table E-6 footnotes for further information.**

2. Single-Shell Tanks Saltwell Jet Pumping (See Table E-6 footnotes for further information)

Tank 241-C-106 - Waste removal operations were initiated on November 18, 1998. Although sluicing of C-106 was considered complete in September 1999, and DOE-HQ was requested to remove this tank from the high heat load list, an additional 0.14 inches of sludge were removed in October 1999. The cumulative total sludge removed following the sluicing in October was 67.8 inches. (See also Table E-6, Tank Inventory and footnotes, for final liquid/solids volumes per HNF-5267, "Waste Retrieval Sluicing System Campaign Number 3 Solids Volume Transferred Calculation," Rev 2, November 17, 1999.)

Still awaiting response from DOE-HQ to remove this tank from the high heat load list as of November 30, 1999.

It is expected approval will be received in December 1999.

Tank 241-S-102 - **Pumping continued until November 17, 1999, when pump problems forced a shutdown. In November 1999, 3.8 Kgallons were pumped; a total of 42.8 Kgallons has been pumped from this tank since pumping started in March 1999.**

Tank 241-S-103 - Saltwell pumping commenced on June 4, 1999. **In November 1999, 1.8 Kgallons were pumped; a total of 22.8 Kgallons has been pumped from this tank since pumping started in June 1999.**

Tank 241-S-106 - Pumping restarted on April 15, 1999, after an earlier pumping campaign in the 1980s. **In November 1999, 3.0 Kgallons were pumped; a total of 201.6 Kgallons has been pumped from this tank since pumping began in the 1980s.**

Tank 241-SX-104 - Pumping was interrupted on July 27, 1999, by a leaking saltwell pump. **This tank is being evaluated for stabilization based on equipment failure.** A total of 231.3 Kgallons has been pumped from this tank since pumping started in the late 1980s.

Tank 241-SX-106 - **In November 1999, 3.6 Kgallons were pumped; a total of 147.3 Kgallons has been pumped from this tank since start of pumping in October 1998.**

Tank 241-T-110 - **No pumping took place in November 1999; the tank is currently undergoing stabilization evaluations.** An in-tank video was taken October 7, 1999. A total of 50.3 Kgallons has been pumped from this tank since start of pumping in May 1997.

Tank 241-U-103 - Pumping commenced September 26, 1999. **In November 1999, 1.4 Kgallons were pumped; a total of 52.3 Kgallons has been pumped from this tank since start of pumping in September 1999.**

3. Double-Shell Tank 241-SY-101 Waste Level Increase

Tank 241-SY-101 exhibited gas release events due to generation and retention of flammable gas. Waste level was used as an indirect measure of retained gas inventory. A mixer pump was installed in the tank in July 1993, which circulates liquid wastes. This prevents gas bubbles from building up at the bottom, and results in venting of small steady gas releases. Since early 1997, the surface level has been rising in spite of regular mixer pump operations. Since April 1999, the surface level has remained relatively constant, indicating that gas release rates have equaled the estimated gas generation rate.

Resolution Status: On February 11, 1998, the PRC recommended that the DOE-RL declare an Unreviewed Safety Question (USQ) over the continued level growth observed in this tank. DOE has modified the 406-inch and 422-inch mixer pump operational controls to allow additional mixer pump and characterization operations. The contractor has established a multi-disciplinary team to solve the level growth issues in SY-101. The prime near-term focus is to transfer approximately 100,000 gallons out of SY-101.

Equipment and instrumentation were installed in September 1999 to transfer approximately 100 Kgallons of waste from SY-101 to SY-102. Actions needed to support the first transfer from SY-101 during the 1st Quarter FY2000 are on schedule. **It is anticipated that pumping will begin in December 1999.**

4. **Waste Tanks Characterization Studies**

The Defense Nuclear Facilities Safety Board recommended to the DOE Secretary of Energy, on November 15, 1999, that Recommendation 93-5, *Waste Tanks Characterization Studies*, be closed. Their review indicated the responsive actions and technical resolutions described in the summary was sufficient.

Appendix J, Characterization Safety Screening Status, has been deleted from this report.

5. RL-PHMC-TANKFARM-1999-0063, Occurrence Report, "An Unreviewed Safety Question Was Discovered," Unusual Occurrence, Latest update November 4, 1999.

The completion times identified in LCO 3.1.3, Transfer Leak Detection Systems, action statement A.2.2.1, "Verify there is no detectable leakage at the leak detection location using an alternate monitoring device," could allow operation outside the analyzed Authorization Basis. This action statement allows the use of alternate leak detection devices with a surveillance frequency not supported by the Authorization Basis.

Standing Order #TWO-99-34 was issued to prohibit implementation of this action statement until this issue is resolved.

The Plant Review Committee directed performance of an Unreviewed Safety Question Determination.

On October 11, 1999, this event was upgraded to "Unusual Occurrence."

A final report will be submitted on or before April 1, 2000.

November 4, 1999: The following information was transferred from UOR -1999-0055 to this report:

On August 3, 1999, the Plant Review Committee (PRC) concluded that a Potential Inadequacy in Authorization Basis (PIAB) exists with respect to the inadequacy of the applicability statement of Limiting Conditions to Operation (LCOs) 3.3.3 and 3.3.3. Process area applicability of transfer system covers that are "PHYSICALLY CONNECTED to an ACTIVE WASTE transfer pump not under administrative lock" may be inadequate for 242-A Evaporator emergency dump configurations.

6. RP-LMHC-TANKFARM-1999-0010, Occurrence Report,"311-ER Vapor Sample Indicated High Lower Flammability Limit Reading," Off-Normal, Notification November 2, 1999.

On November 1, 1999, 241-ER-311 Catch Tank was vapor sampled during planned Characterization Operations sampling. The results of the sampling with a Combustible Gas Meter (CGM) revealed a reading of >25% Lower Flammability Limit (LFL) reading. A second reading was obtained using a different instrument; again the reading was >25% LFL. Both readings were off scale (HIGH). Samples wee captured and sent to the lab for analysis.

All work was terminated on or near tank ER-311. Restricted access to the fenced area that surrounds this tank was initiated by controlling the entrance key and posting the gate, pending further investigation and subsequent resolution.

Status as of November 30, 1999:

The Plant Review Committee met on November 9, 1999, to review sample data and status of field activities. A portable exhauster has been installed to remove the argon used to dilute/displace flammable concentrations of hydrogen.

Operational restrictions remain on ER-311 and adjacent facilities (ER-311 pump pit, ER-151 and ER-152 diversion boxes).

APPENDIX A

WASTE TANK SURVEILLANCE MONITORING TABLES

TABLE A-1. TEMPERATURE MONITORING IN WATCH LIST TANKS (Sheet 1 of 2)

November 30, 1999

These tanks have been identified as Watch List Tanks in accordance with Public Law 101-510, Section 3137, *"Safety Measures for Waste Tanks at Hanford Nuclear Reservation,"* (1990), because they "... may have a serious potential for release of high-level waste due to uncontrolled increases in temperature or presssure."

All Watch List tanks are reviewed for increasing temperature trends. Temperatures in these tanks are monitored by the Tank Monitor And Control System (TMACS), unless indicated otherwise.

Temperatures are taken in the waste unless in-waste thermocouples are out of service. Temperatures below are the highest temperatures recorded in these tanks during this month.

Temperatures in Degrees F.

SINGLE-SHELL TANKS

Hydrogen (Flammable Gas)

Tank No.	Temp.	Officially Added to Watch List
A-101	147	1/91
AX-101	128	1/91
AX-103	110	1/91
S-102 *	103	1/91
S-111*	91	1/91
S-112*	85	1/91
SX-101*	132	1/91
SX-102*	141	1/91
SX-103*	159	1/91
SX-104*	142	1/91
SX-105*	165	1/91
SX-106*	102	1/91
SX-109 (1)*	138	1/91
T-110*	65	1/91
U-103	87	1/91
U-105	89	1/91
U-107	78	12/93
U-108	87	1/92
U-109	83	1/91
19 SSTs		

Organics

Tank No.	Temp.	Officially Added to Watch List
C-102	83	5/94
C-103	116	1/91
2 Tanks		

High Heat Load

Tank No.	Temp.	Officially Added to Watch List
C-106 (2)	70	1/91
1 Tank		

Sluicing was completed in September 1999, and a formal request was made to DOE-HQ to remove this tank from the High Heat Load Watch List.

DOUBLE-SHELL TANKS

AN-103	107	1/91
AN-104	107	1/91
AN-105	100	1/91
AW-101	100	6/93
SY-101	124	1/91
SY-103	95	1/91
6 DSTs		

22 Single-Shell tanks
6 Double-Shell tanks
28 Tanks on Watch Lists

All tanks were removed from the Ferrocyanide and 18 tanks from the Organics Watch Lists. See Table A-2.

(*) TMACS is O/S due to power outage which caused damage to acromags in T, TX and TY farms since August 1999. TMACS has not worked properly in S and SX farms since November 20, 1999; being repaired. Manual readings taken weekly.

TABLE A-1. TEMPERATURE MONITORING IN WATCH LIST TANKS
(sheet 2 of 2)

Notes:

Unreviewed Safety Question(USQ):
When a USQ is declared, special controls are required, and work in the tanks is limited. There are currently no USQs on single-shell tanks. There is a USQ on double-shell tank SY-101 for liquid level increase.

Hydrogen/Flammable Gas:
These tanks are suspected of having a significant potential for hydrogen/flammable gas generation, entrapment, and episodic release. The USQ associated with these tanks was closed in September 1998. Twenty-five tanks (19 SST and 6 DST) remain on the Hydrogen Watch List.

Organic Salts:
These tanks contain concentrations of organic salts ≥3 weight% of total organic carbon (TOC)(equivalent to 10 wt% sodium acetate). The USQ associated with these tanks was closed in October 1998, and 18 organic complexant tanks were removed from the Organic Watch List in December 1998. Two organic solvent tanks (C-102 and C-103) remain on the Organic Watch List.

High Heat:
These tanks contain heat generating strontium-rich sludge and require drainable liquid to be maintained in the tank to promote cooling.

Active ventilation:
There are 15 single-shell tanks on active ventilation (eight are on the Watch List as indicated by an asterisk):

C-105	SX-107
C-106 *	SX-108
SX-101 *	SX-109 *
SX-102 *	SX-110
SX-103 *	SX-111
SX-104 *	SX-112
SX-105 *	SX-114
SX-106 *	

Footnotes:

(1) Tank SX-109 has the potential for flammable gas accumulation only because other SX tanks vent through it.

(2) Tank C-106 is on the Watch List because in the event of a leak without water additions the tank could have exceeded temperature limits resulting in unacceptable structural damage. Sluicing of C-106 has been completed and liquid and sludge have been removed to the point that cooling water no longer needs to be added. A request was sent to DOE-HQ in September 1999 for removal of tank C-106 from the High Heat Load Watch List.

TABLE A-2 TEMPERATURE MONITORING IN NON-WATCH LIST TANKS

November 30, 1999

SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>26,000 Btu/hr)

Nine tanks have high heat loads for which temperature surveillance requirements are established by HNF-SD-WM-TSR-006, Rev 1, *Tank Waste Remediation System Technical Safety Requirements,* December 1999. Only one of these tanks (241-C-106) is on the High Heat Watch List. In an analysis, WHC-SD-WM-SARR-010, Rev 1, *Heat Removal Characteristics of Waste Storage Tanks,* Kummerer, 1995, it was estimated that nine tanks have heat sources >26,000 Btu/hr, which is the new parameter for determining high heat load tanks. See also document HNF-SD-WM-BIO-001, Rev 1, *Tank Waste Remediation System Basis for Interim Operation,* Noorani, 199

Temperatures in these tanks did not exceed TSR requirements for this month, and are monitored by the Tank Monitor and Control System (TMACS), unless indicated otherwise. All high heat load tanks are on active ventilation.

Tank No.	Temperature (F.)	
C-106 (1)	70	(Riser 14)
	70	(Riser 8)
SX-103*	159	
SX-107*	166	
SX-108*	184	
SX-109*	137	
SX-110*	164	
SX-111*	185	
SX-112*	150	
SX-114*	175	
9 Tanks		

Notes:
(1) C-106 is on the High Heat Load Watch List.
A request was sent to DOE-HQ in September 1999 for removal of tank C-106 from the High Heat Load Watch List.
(*) TMACS has not worked properly in SX farm since November 20, 1999; being repaired. Manual readings taken weekly.

SINGLE SHELL TANKS WITH LOW HEAT LOADS (<26,000 Btu/hr)

There are 119 low heat load non-watch list tanks. Temperatures in tanks connected to TMACS are monitored by TMACS; temperatures in those tanks not yet connected to TMACS are manually taken semiannually in January and July. Temperatures obtained were within historical ranges for the applicable tank.

No temperatures have been obtained for several years in the tanks listed below. Most of these tanks have no thermocouple tree.

Tank No.	Tank No.
BX-104	TX-101
BY-102	TX-110
BY-109	TX-114
C-204	TX-116
SX-115	TX-117
T-102	U-104
T-105	

TABLE A-3. ADDITIONS/DELETIONS TO WATCH LISTS BY YEAR
November 30, 1999

Added/Deleted dates may differ from dates that tanks were officially added to the Watch Lists. (See Table A-1).

	Ferrocyanide	Hydrogen	Organics	High Heat	Total Tanks (1) SST	DST	Total
1/91 Original List -Response to Public Law 101-5	23	23	8	1	47	6	52
Added 2/91 (revision to Original List)	1 T-107				1		1
Total - December 31, 1991	24	23	8	1	48	6	53
Added 8/92		1 AW-101				1	1
Total - December 31, 1992	24	24	8	1	48	6	54
Added 3/93			1 U-111		1		
Deleted 7/93	-4 (BX-110) (BX-111) (BY-101) (T-101)				-4		
Added 12/93		1 (U-107)			0		
Total - December 31, 1993	20	25	9	1	45	6	51
Added 2/94			1 T-111		1		
Added 5/94			10 A-101 AX-102 C-102 S-111 SX-103 TY-104 U-103 U-105 U-203 U-204		4		
Deleted 11/94	-2 (BX-102) (BX-106)				-2		
Total - December 1994 thru December 1995	18	25	20	1	48	6	54
Deleted 6/96	-4 (C-108) (C-109) (C-111) (C-112)				-4		
Deleted 9/96	-14 (BY-103) (BY-104) (BY-105) (BY-106) (BY-107) (BY-108) (BY-110) (BY-111) (BY-112) (T-107) (TX-118) (TY-101) (TY-103) (TY-104)				-12		
Deleted 12/98			18 (A-101) (AX-102) (B-103) (S-102) (S-111) (SX-103) (SX-106) (T-111) (TX-105) (TX-118) (TY-104) (U-103) (U-105) (U-106) (U-107) (U-111) (U-203) (U-204)		-10		
Total - December 1996 thru November 1999	0	25	2	1	22	6	28

(1) Eighteen of the 20 tanks were removed from the Organics Watch List in December 1998: eight of the tanks removed from the Organics List are also on the Hydrogen Watch List; therefore, the total tanks added/deleted depends upon whether a tank is also on another list.
See table A-1 for current Watch List Tanks.

TABLE A-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 1 of 6)

November 30, 1999

The following table indicates whether Single-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month:

NOTE:
All Watch List and High Heat tank temperature monitoring is in compliance. (4)
All Dome Elevation Survey monitoring is in compliance, with exception (see footnote 11).
All Psychrometrics monitoring is in compliance (2).
Drywell monitoring no longer required (5).
In-tank photos/videos are taken "as needed"

LEGEND:	
(Shaded)	= in compliance with all applicable documentation
N/C	= noncompliance with applicable documentation
O/S	= Out of Service
Neutron	= LOW readings taken by Neutron probe
POP	= Plant Operating Procedure, TO-040-650
MT/FIC/ ENRAF	= Surface level measurement devices
OSD	= Operating Spec. Doc., OST-T-151-00013, 00030, 00031
N/A	= Not applicable (not monitored, or no monitoring schedule)
None	= Applicable equipment not installed
FSAR/TSR	= Final Safety Analysis Report/Technical Safety Requirements

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	Neutron
A-101	X			LOW	None	None		
A-102				None	None		None	None
A-103				LOW	None	None		
A-104				None	None	None		None
A-105				None		None	None	None
A-106				None	None	None		None
AX-101	X			LOW	None	None		(9)
AX-102				None	None	None		None
AX-103	X			None	None	None		None
AX-104				None	None	None		None
B-101				None	None		None	None
B-102				ENRAF	None	None		None
B-103				None	None		None	O/S
B-104				LOW		None	None	
B-105				LOW		None	None	
B-106				FIC	None		None	None
B-107				None		None	None	None
B-108				None	None		None	None
B-109				None		None	None	None
B-110				LOW		None	None	
B-111				LOW	None		None	
B-112				ENRAF	None	None		None
B-201				MT		None	None	None
B-202				MT		None	None	None
B-203				MT		None	None	None
B-204				MT		None	None	None
BX-101				ENRAF	None	None		None
BX-102				None	None	None		None
BX-103				ENRAF	None	None		None
BX-104			None	ENRAF	None	None		None
BX-105				None	None	None		None
BX-106				ENRAF	None	None		None
BX-107				ENRAF	None	None		None

TABLE A-5. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 2 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	Neutron
BX-108				None	None	None		None
BX-109				None	None	None		None
BX-110				None	None	None		None
BX-111				LOW	None	None		
BX-112				ENRAF	None	None		None
BY-101				LOW		None	None	
BY-102			None	LOW		None	None	
BY-103				LOW	None	None		
BY-104				LOW		None	None	
BY-105				LOW		None	None	
BY-106				LOW		None	None	
BY-107				LOW		None	None	
BY-108				None		None	None	None
BY-109			None	LOW	None	O/S	None	
BY-110				LOW	None	None		
BY-111				LOW	None	None		
BY-112				LOW		None	None	
C-101				None		None	None	None
C-102	X			None	None		None	None
C-103	X			ENRAF	None	None		None
C-104				None	None	None		None
C-105				None	None	None		None
C-106 (3)	X	X		ENRAF	None	None		None
C-107				ENRAF	None	None		None
C-108				None		None	None	None
C-109				None		None	None	None
C-110				MT		None	None	None
C-111				None		None	None	None
C-112				None	None	None		None
C-201				None		None	None	None
C-202				None		None	None	None
C-203				None		None	None	None
C-204			None	None		None	None	None
S-101				ENRAF	None	None		
S-102	X			ENRAF	None	None		
S-103				ENRAF	None	None		
S-104				LOW	None	None		
S-105				LOW	None	None		
S-106				ENRAF	None	None		
S-107				ENRAF	None	None		None
S-108				LOW	None	None		
S-109				LOW	None	None		
S-110				LOW	None	None		
S-111	X			ENRAF	None	None		
S-112	X			LOW	None	None		
SX-101	X			LOW	None	None		
SX-102	X			LOW	None	None		
SX-103	X	X		LOW	None	None		
SX-104	X			LOW	None	None		
SX-105	X			LOW	None	None		
SX-106	X			ENRAF	None	None		
SX-107		X		None	None	None		None
SX-108		X		None	None	None		None

TABLE A-5. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 3 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	Neutron
SX-109	X	X		None	None	None		None
SX-110		X		None	None	None		None
SX-111		X		None	None	None		None
SX-112		X		None	None	None		None
SX-113				None	None	None		None
SX-114		X		None	None	None		None
SX-115			None	None	None	None		None
T-101				None	None	None		None
T-102			None	ENRAF	None	None		None
T-103				None	None	None		None
T-104				LOW	None	None		
T-105			None	None	None	None		None
T-106				None	None	None		None
T-107				ENRAF	None	None		None
T-108				ENRAF	None	None		None
T-109				None	None	None		None
T-110	X			LOW	None	None		
T-111				LOW	None	None		
T-112				ENRAF	None	None		None
T-201				MT		None	None	None
T-202				MT		None	None	None
T-203				None		None	None	None
T-204				MT		None	None	None
TX-101			None	ENRAF	None	None		None
TX-102				LOW	None	None		
TX-103				None	None	None		None
TX-104				None	None	None		None
TX-105				None	None	None		None [8]
TX-106				LOW	None	None		
TX-107				None	None	None		None
TX-108				None	None	None		None
TX-109				LOW	None	None		
TX-110			None	LOW	None	None		
TX-111				LOW	None	None		
TX-112				LOW	None	None		
TX-113				LOW	None	None		
TX-114			None	LOW	None	None		
TX-115				LOW	None	None		
TX-116			None	None	None	None		None
TX-117			None	LOW	None	None		
TX-118				LOW	None	None		
TY-101				None	None	None		None
TY-102				ENRAF	None	None		None
TY-103				LOW	None	None		
TY-104				ENRAF	None	None		None
TY-105				None	None	None		None
TY-106				None	None	None		None
U-101				MT		None	None	None
U-102				LOW	None	None		
U-103	X			ENRAF	None	None		
U-104			None	None		None	None	None
U-105	X			ENRAF	None	None		
U-106				ENRAF	None	None		

TABLE A-5. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 4 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	Neutron
U-107	X			ENRAF	None	None		
U-108	X			LOW	None	None		
U-109	X			ENRAF	None	None		
U-110				None	None	None		None
U-111				LOW	None	None		
U-112				None		None	None	None
U-201				MT		None	None	None
U-202				MT		None	None	None
U-203				None	None	None		None
U-204				ENRAF	None	None		None
Catch Tanks and Special Surveillance Facilities								
A-302-A	N/A	N/A	N/A	(6)	None	None		None
A-302-B	N/A	N/A	N/A	(6)		None	None	None
ER-311	N/A	N/A	N/A	(6)	None	N/C (10)	None	None
AX-152	N/A	N/A	N/A	(6)		None	None	None
AZ-151	N/A	N/A	N/A	(6)	None		None	None
AZ-154	N/A	N/A	N/A	(6)		None	None	None
BX-TK/SMP	N/A	N/A	N/A	(6)		None	None	None
A-244 TK/SMP	N/A	N/A	N/A	(6)	None	None	None	None
AR-204	N/A	N/A	N/A	(6)			None	None
A-417	N/A	N/A	N/A	(6)	None	None	None	None
A-350	N/A	N/A	N/A	(6)	None	None	None	None
CR-003	N/A	N/A	N/A	(6)	None	None	None	None
Vent Sta.	N/A	N/A	N/A	(6)		None	None	None
244-S TK/SMP	N/A	N/A	N/A	(6)	None	None	None	None
S-302	N/A	N/A	N/A	(6)	None	None		None
S-304	N/A	N/A	N/A	(6)	None	None		None
TX-244 TK/SMP	N/A	N/A	N/A	(6)		None	None	None
TX-302-B	N/A	N/A	N/A	(6)		None	None	None
TX-302-C	N/A	N/A	N/A	(6)	None	None		None
U-301-B	N/A	N/A	N/A	(6)	None	None		None
UX-302-A	N/A	N/A	N/A	(6)	None	None		None
S-141	N/A	N/A	N/A	(6)	O/S	None	None	None
S-142	N/A	N/A	N/A	(6)	O/S	None	None	None
Totals: 149 tanks	22 Watch List Tanks (4)	9 High Heat Tanks (4)	N/C: 0		N/C: 0	N/C: 0	N/C: 0	N/C: 0

TABLE A-5. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS -149 TANKS
(Sheet 5 of 6)

Footnotes:

1. All SSTs have either manual tape, FIC, or ENRAF surface level measuring devices. Some also have zip cords.

   ENRAF gauges are being installed to replace FICs (or sometimes manual tapes). The ENRAF gauges are being connected to TMACS, but many are currently being read manually from the field. See Table A-7 for list of ENRAF installations.

2. High heat tanks have active exhausters; psychrometrics can be taken in the high heat tanks. Psychrometric readings are taken on an "as needed" basis with the exception of tanks C-105 and C-106. Hanford Federal Facility Agreement and Consent Order," Washington State Department of Ecology, U. S. Environmental Protection Agency, and U. S. Department of Energy," Fourth Amendment 1994 (Tri-Party Agreement) requires psychrometric readings to be taken in C-105 and C-106 on a monthly frequency. Also, SX-farm now has psychrometrics taken monthly.

3. C-106 is the only tank on the high heat load list included on the High Heat Watch List. In September 1999 a request was made to DOE-HQ to remove tank C-106 from the High Heat Load Watch List.

4. Temperature readings may be regulated by OSD, POP, or FSAR (FSAR only regulates high heat load tanks). Temperatures cannot be obtained in 13 low heat load tanks (see Table A-4). The OSD does not require readings or repair of out-of-service thermocouples for the low heat load (≤40,000 Btu/h) tanks. However, the POP requires that attempts are to be made semiannually in January and July to obtain readings for these tanks.

   Temperatures in some tanks cannot be taken in the waste because the waste level is lower than the lowest thermocouple in these trees.

   Temperatures for many tanks are monitored continuously by TMACS; see Table A-8, TMACS Monitoring Status.

5. Document OSD-T-151-00031, "Operating Specifications for Tank Farm Leak Detection," REV C-0, January 13, 1999, requires that single-shell tanks with the surface level measurement device contacting liquid, partial liquid, or floating crust surface, will be monitored for leak detection on a daily basis. Tanks with a solid surface will be monitored for leak detection on a weekly basis by taking neutron scan data from a Liquid Observation Well (LOW), if an LOW is present. Tanks with a solid surface but without LOWs will not be monitored for leak detection if the tank has been interim stabilized, until an LOW is installed.

   This OSD revision does not require drywell surveys to be taken. (Drywell scans are being taken around C-106, as required by the Waste Retrieval Sluicing System, Spectral Gamma Waste Management). The OSD specifies what leak detection methods are to be used for each tank, and the requirements if the readings are not taken on the required frequency or if equipment is out of service.

6. Leak detection for the catch tanks is performed by monitoring for the buildup of liquid in the secondary containment (for most tanks with secondary containment) or for decrease in the liquid level for those tanks without secondary containment or secondary containment monitoring.

   Catch tank 240-S-302 is monitored for intrusions only, and is not subject to leak detection monitoring requirements until liquid is present above the intrusion level.

   Weight Factor is the surface level measuring device currently used in A-417, A-350, 244-A Tank/Sump, and 244-S Tank/Sump. DCRT CR-003 is inactive and measured in gallons.

TABLE A-5. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS - 149 TANKS
(Sheet 6 of 6)

7. Document SD-WM-TI-605, REV. 0, dated January 1994, describes the rationale for Liquid Observation Well (LOW) installation priority. This priority is based on tank leak status, tank surface condition, and tank stabilization status. Also included is a listing of tanks with the waste level being below two feet which have no priority assigned because no effort will be made to install LOWs in the near future. LOW probes are unable to accurately monitor interstitial liquid levels less than two feet high.

   Tanks which will not receive LOWs:

A-102	BX-101	C-201	T-106
A-104	BX-103	C-202	T-108
A-105	BX-105	C-203	T-109
AX-102	BX-106	C-204	TX-107
AX-104	BX-108	SX-110	TY-102
B-102	C-108	SX-113	TY-104
B-103	C-109	SX-115	TY-106
B-112	C-111	T-102	U-101
		T-103	U-112

   Total - 34 Tanks

8. TX-105 - the LOW was in riser 8; the riser has been removed and the LOW has not been monitored since January 1987. Liquid levels are being taken in riser 9 by ENRAF and recorded in TMACS.

9. AX-101 - LOW readings are taken by gamma sensors.

10. **Catch Tank ER-311 - the FIC is out of service with no secondary containment monitoring. The primary device must be repaired or a valid reading obtained from an alternate device within 14 days (daily). The FIC was O/S on October 21, 1999; and due for repair on November 4. Discrepancy Report 99-863 was issued on November 4; Occurrence Report RP-LHMC-TANKFARM-1999-0010 was issued November 2, 1999.**

11. **Tank TX-113 - Dome elevation surveys are required to be performed as specified in OSD-T-151-00013. TX-113 has suspended airlift circulators and is required to have dome elevation surveys obtained from a minimum of two benchmarks every 12 months +/- 1 month. The last valid dome elevation survey was taken on July 16, 1998. This exceeds the dome elevation survey frequency specified in the OSD. Discrepancy Report 99-865 was issued on December 1, 1999.**

TABLE A-5. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS

28 TANKS (Sheet 1 of 2)

November 30, 1999

The following table indicates whether Double-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month.

NOTE:

Dome Elevation Surveys are not required for DSTs.

Psychrometrics and in-tank photos/videos are taken "as needed" (2)

LEGEND:	
(Shaded)	= In compliance with all applicable documentation
N/C	= Noncompliance with applicable documentation
FIC/ENRAF	= Surface level measurement devices
M.T.	
OSD	= OSD-T-151-0007, OSD-T-151-00031
None	= no M.T., FIC or ENRAF installed
O/S	= Out of Service
W.F.	= Weight Factor
N/A	= Not Applicable (not monitored or no monitoring schedule)
Rad.	= Radiation

Tank Number	Watch List	Temperature Readings (3) (OSD)	Surface Level Readings (1) (OSD)			Radiation Readings		
						Leak Detection Pits (4) (OSD)		Annulus (OSD)
			M.T.	FIC	ENRAF	W.F.	Rad. (6)	
AN-101				None			N/A	
AN-102					None		N/A	
AN-103	X			None			N/A	
AN-104	X		O/S	None			N/A	
AN-105	X		O/S	None			N/A	
AN-106					None		N/A	
AN-107					None	O/S	N/A	
AP-101			O/S	None		O/S (7)	N/A	
AP-102				None		O/S (7)	N/A	
AP-103				None		O/S (7)	N/A	
AP-104			O/S	None		O/S (7)	N/A	
AP-105				None		O/S (7)	N/A	
AP-106				None		O/S (7)	N/A	
AP-107				None		O/S (7)	N/A	
AP-108				None		O/S (7)	N/A	
AW-101	X		O/S	None		O/S(7)	N/A	
AW-102					(5)		N/A	
AW-103				None			N/A	
AW-104			O/S	None			N/A	
AW-105				None			N/A	
AW-106				None			N/A	
AY-101				None		O/S	N/A	O/S
AY-102				None			N/A	
AZ-101			O/S	None			N/A	O/S
AZ-102					None		N/A	O/S
SY-101	X		None	None			N/A	
SY-102				None			N/A	
SY-103	X		O/S	None		O/S	N/A	
Totals: 28 tanks	6 Watch List Tanks	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0

TABLE A-5. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS - 28 TANKS
(Sheet 2 of 2)

Footnotes:

1. Some double-shell tanks have both FIC and manual tape which is used when the FIC is out of service. Noncompliance (N/C) will be shown when no readings are obtained. ENRAF gauges are being installed to replace FICs. The ENRAF gauges are being connected to TMACS, but some are currently being read manually.

2. Psychrometric readings are taken on an "as needed" basis. No psychrometric readings are currently being taken in the double-shell tanks.

3. OSD specifies double-shell tank temperature limits, gradients, etc.

4. Applicable OSD and HNF-IP-0842, latest revisions, are used as guidelines for monitoring Leak Detection Pits. See also (6) and (7) below.

5. AW-102 has ENRAF, FIC and M.T. At some point the FIC will be removed.

6. USQ TF-97-0038, dated April 28, 1997, specifies discontinuing the use of leak detection pit radiation monitoring equipment in all double-shell tank farms where the leak detection pits are used as tertiary leak detection. This applies to all double-shell tank farms.

7. Leak Detection Pit weekly readings are being obtained by Instrument Technicians in these tanks:
   AP-103C (for tanks AP-101 - 104)
   AP-105C (for tanks AP-105 - 108)

TABLE A-6. ENRAF SURFACE LEVEL GAUGE INSTALLATION AND DATA INPUT METHODS

November 30, 1999

LEGEND

SACS = Surveillance Analysis Computer System
TMACS = Tank Monitor and Control System
Auto = Automatically entered into TMACS and electronically transmitted to SACS
Manual = Manually entered directly into SACS by surveillance personnel, from Field Data sheets

EAST AREA

Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method
A-101	09/95	Auto	B-201		
A-102			B-202		
A-103	07/96	Auto	B-203		
A-104	05/96	Manual	B-204		
A-105			BX-101	04/96	Auto
A-106	01/96	Auto	BX-102	06/96	Auto
AN-101	08/96	Auto	BX-103	04/96	Auto
AN-102			BX-104	05/96	Auto
AN-103	08/95	Auto	BX-105	03/96	Auto
AN-104	08/95	Auto	BX-106	07/94	Auto
AN-105	08/95	Auto	BX-107	06/96	Auto
AN-106			BX-108	05/96	Auto
AN-107			BX-109	08/95	Auto
AP-101	06/99	Auto	BX-110	06/96	Auto
AP-102	08/99	Auto	BX-111	05/96	Auto
AP-103	08/99	Auto	BX-112	03/96	Auto
AP-104	07/99	Auto	BY-101		
AP-105	08/99	Auto	BY-102	09/99	Manual
AP-106	08/99	Auto	BY-103	12/96	Manual
AP-107	08/99	Auto	BY-104		
AP-108	08/99	Auto	BY-105		
AW-101	08/95	Auto	BY-106		
AW-102	05/96	Auto	BY-107		
AW-103	05/96	Auto	BY-108		
AW-104	01/96	Auto	BY-109		
AW-105	06/96	Auto	BY-110	02/97	Manual
AW-106	06/96	Auto	BY-111	02/99	Manual
AX-101	09/95	Auto	BY-112		
AX-102	09/98	Auto	C-101		
AX-103	09/95	Auto	C-102		
AX-104	10/96	Auto	C-103	08/94	Auto
AY-101	03/96	Auto	C-104	04/99	Manual
AY-102	01/98	Auto	C-105	05/96	Manual
AZ-101	08/96	Manual	C-106	02/96	Auto
AZ-102			C-107	04/95	Auto
B-101			C-108		
B-102	02/95	Manual	C-109		
B-103			C-110		
B-104			C-111		
B-105			C-112	03/96	Manual
B-106			C-201		
B-107			C-202		
B-108			C-203		
B-109			C-204		
B-110					
B-111					
B-112	03/95	Manual			

Total East Area: 53

WEST AREA

Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method
S-101	02/95	Auto	TX-101	11/95	Auto
S-102	05/95	Auto	TX-102	05/96	Auto
S-103	05/94	Auto	TX-103	12/95	Auto
S-104	05/99	Auto	TX-104	03/96	Auto
S-105	07/95	Auto	TX-105	04/96	Auto
S-106	06/94	Auto	TX-106	04/96	Auto
S-107	06/94	Auto	TX-107	04/96	Auto
S-108	07/95	Auto	TX-108	04/96	Auto
S-109	08/95	Auto	TX-109	11/95	Auto
S-110	08/95	Auto	TX-110	05/96	Auto
S-111	08/94	Auto	TX-111	05/96	Auto
S-112	05/95	Auto	TX-112	05/96	Auto
SX-101	04/95	Auto	TX-113	05/96	Auto
SX-102	04/95	Auto	TX-114	05/96	Auto
SX-103	04/95	Auto	TX-115	05/96	Auto
SX-104	05/95	Auto	TX-116	05/96	Auto
SX-105	05/95	Auto	TX-117	06/96	Auto
SX-106	08/94	Auto	TX-118	03/96	Auto
SX-107	09/99	Auto	TY-101	07/95	Auto
SX-108	09/99	Auto	TY-102	09/95	Auto
SX-109	09/98	Auto	TY-103	09/95	Auto
SX-110	09/99	Auto	TY-104	06/95	Auto
SX-111	09/99	Auto	TY-105	12/95	Auto
SX-112	09/99	Auto	TY-106	12/95	Auto
SX-113	09/99	Auto	U-101		
SX-114	09/99	Auto	U-102	01/96	Manual
SX-115	09/99	Manual	U-103	07/94	Auto
SY-101	07/94	Auto	U-104		
SY-102	06/94	Manual	U-105	07/94	Auto
SY-103	07/94	Auto	U-106	08/94	Auto
T-101	05/95	Manual	U-107	08/94	Auto
T-102	06/94	Auto	U-108	05/95	Auto
T-103	07/95	Manual	U-109	07/94	Auto
T-104	12/95	Manual	U-110	01/96	Manual
T-105	07/95	Manual	U-111	01/96	Manual
T-106	07/95	Manual	U-112		
T-107	06/94	Auto	U-201		
T-108	10/95	Manual	U-202		
T-109	09/94	Manual	U-203	09/98	Manual
T-110	06/95	Auto	U-204	06/98	Manual
T-111	07/95	Manual			
T-112	09/95	Manual			
T-201					
T-202					
T-203					
T-204					

Total West Area: 77

130 ENRAFs installed: 103 automatically entered into TMACS, 27 manually entered into SACS

TABLE A-7. TANK MONITOR AND CONTROL SYSTEM (TMACS)

November 30, 1999

Note: Indicated below are the number of tanks having at least one operating sensor monitored by TMACS.

Some tanks have more than one sensor: multiple sensors of the same type in a tank are not shown in the table (for example: 10 tanks in BY-Farm have at least one operating TC sensor and 3 tanks in BY Farm have at least one operating RTD sensor).

Acceptance Testing Completed: Sensors Automatically Monitored by TMACS

EAST AREA Tank Farm	Temperatures Thermocouple Tree (TC)	Temperatures Resistance Thermal Device (RTD)	ENRAF Level Gauge	Pressure (b)	Hydrogen (c)	Gas Sample Flow
A-Farm (6 Tanks)	1		3		1	1
AN-Farm (7 Tanks)	7		4	7	3	3
AP-Farm (8 Tanks)			8			
AW-Farm (6 Tanks)	6		6		1	1
AX-Farm (4 Tanks)	3		4		1	
AY-Farm (2 Tanks)			2			
AZ-Farm (2 Tanks)						
B-Farm (16 Tanks)	1					
BX-Farm (12 Tanks)	11		12			
BY-Farm (12 Tanks)	10	3				
C-Farm (16 Tanks)	15	1	3	1		
TOTAL EAST AREA (91 Tanks)	54	4	42	8	6	5
WEST AREA						
S-Farm (12 Tanks)	12 *		12*	1	3	3
SX-Farm (15 Tanks)	14*		14*	1	7	7
SY-Farm (3 Tanks) (a)	3		2	1	2	2
T-Farm (16 Tanks)	14	1	3		1	1
TX-Farm (18 Tanks)	13		18			
TY-Farm (6 Tanks)	6	3	6			
U-Farm (16 Tanks)	15		6	4	6	6
TOTAL WEST AREA (86 Tanks)	77	4	61	7	19	19
TOTALS (177 Tanks)	131	8	103	15	25	24

(a) Tank SY-101 has 2 gas sample flow sensors plus 2 vent flow sensors, and 2 ENRAFs.

(b) Each tank two sensors (high and low range).

(c) Each tank has two sensors (high and low range).

(*) **TMACS has been out of service since November 20, 1999, for the thermocouples and ENRAFs in S and SX tank farms.**

APPENDIX B

DOUBLE SHELL TANK WASTE TYPE AND SPACE ALLOCATION

Table B-1. Double Shell Tank Waste Inventory - November 30, 1999 (Sheet 2 of 2)

TOTAL AVAILABLE SPACE AS OF NOVEMBER 30, 1999:			12148 KGALS
WATCH LIST TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
Unusable DST Headspace - Due to Special Restrictions	AN-103	DSS	183 KGALS
Placed on the Tanks, as Stated in the "Wyden Bill"	AN-104	DSSF	87 KGALS
	AN-105	DSSF	14 KGALS
	AW-101	DSSF	14 KGALS
	SY-101	CC	-43 KGALS
	SY-103	CC	397 KGALS
		TOTAL=	**652 KGALS**
		AVAILABLE TANK SPACE	12148 KGALS
		MINUS WATCH LIST SPACE=	-652 KGALS
TOTAL AVAILABLE SPACE AFTER WATCH LIST SPACE DEDUCTIONS=			**11496 KGALS**
RESTRICTED TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
DST Headspace Available to Store Only Specific Waste Types	AN-102	CC	82 KGALS
	AN-107	CC	97 KGALS
	AP-102	CP	48 KGALS
	AZ-101	AW	134 KGALS
	AZ-102	AW	39 KGALS
		TOTAL=	**400 KGALS**
		AVAILABLE SPACE AFTER WATCH LIST DEDUCTIONS	11496 KGALS
		MINUS RESTRICED SPACE=	-400 KGALS
TOTAL AVAILABLE SPACE AFTER RESTRICTED SPACE DEDUCTIONS=			**11096 KGALS**
USABLE/WASTE RECEIVER TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
DST Headspace Available to Store Facility Generated	AN-101	DN	980 KGALS
and Evaporator Product Waste	AN-106	CC	1102 KGALS
	AP-101	DSSF	25 KGALS
	AP-103	CC	857 KGALS
	AP-104	DN	1116 KGALS
	AP-105	DSSF	376 KGALS
FACILITY WASTE RECEIVER TANK	AP-106	DN	1047 KGALS
	AP-107	DN	165 KGALS
FACILITY WASTE RECEIVER TANK	AP-108	DN	757 KGALS
EVAPORATOR FEED TANK	AW-102	DN	1058 KGALS
	AW-103	NCRW	630 KGALS
	AW-104	DN	22 KGALS
	AW-105	NCRW	711 KGALS
EVAPORATOR RECEIVER TANK	AW-106	DSSF	673 KGALS
	AY-101	DC	828 KGALS
	AY-102	DN	365 KGALS
FACILITY WASTE RECEIVER TANK	SY-102	DN	384 KGALS
		TOTAL AVAILABLE USABLE TANK SPACE	**11096 KGALS**
EVAPORATOR OPERATIONAL TANK SPACE:			-1140 KGALS
SPARE TANK SPACE:	***(DOE Order 5820.2A)***		-2280 KGALS
TOTAL TANK SPACE AVAILABLE AFTER ALL DEDUCTIONS=			**7676 KGALS**

SEG1199

Table B-1. Double Shell Tank Waste Inventory - November 30, 1999 (Sheet 2 of 2)

TOTAL AVAILABLE SPACE AS OF NOVEMBER 30, 1999:			**12148 KGALS**
WATCH LIST TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
Unusable DST Headspace - Due to Special Restrictions Placed on the Tanks, as Stated in the "Wyden Bill"	AN-103	DSS	183 KGALS
	AN-104	DSSF	87 KGALS
	AN-105	DSSF	14 KGALS
	AW-101	DSSF	14 KGALS
	SY-101	CC	-43 KGALS
	SY-103	CC	397 KGALS
		TOTAL=	**652 KGALS**
		AVAILABLE TANK SPACE	12148 KGALS
		MINUS WATCH LIST SPACE=	-652 KGALS
TOTAL AVAILABLE SPACE AFTER WATCH LIST SPACE DEDUCTIONS=			**11496 KGALS**
RESTRICTED TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
DST Headspace Available to Store Only Specific Waste Types	AN-102	CC	82 KGALS
	AN-107	CC	97 KGALS
	AP-102	CP	48 KGALS
	AZ-101	AW	134 KGALS
	AZ-102	AW	39 KGALS
		TOTAL=	**400 KGALS**
		AVAILABLE SPACE AFTER WATCH LIST DEDUCTIONS	11496 KGALS
		MINUS RESTRICED SPACE=	-400 KGALS
TOTAL AVAILABLE SPACE AFTER RESTRICTED SPACE DEDUCTIONS=			**11096 KGALS**
USABLE/WASTE RECEIVER TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
DST Headspace Available to Store Facility Generated and Evaporator Product Waste	AN-101	DN	980 KGALS
	AN-106	CC	1102 KGALS
	AP-101	DSSF	25 KGALS
	AP-103	CC	857 KGALS
	AP-104	DN	1116 KGALS
	AP-105	DSSF	376 KGALS
FACILITY WASTE RECEIVER TANK	AP-106	DN	1047 KGALS
	AP-107	DN	165 KGALS
FACILITY WASTE RECEIVER TANK	AP-108	DN	757 KGALS
EVAPORATOR FEED TANK	AW-102	DN	1058 KGALS
	AW-103	NCRW	630 KGALS
	AW-104	DN	22 KGALS
	AW-105	NCRW	711 KGALS
EVAPORATOR RECEIVER TANK	AW-106	DSSF	673 KGALS
	AY-101	DC	828 KGALS
	AY-102	DN	365 KGALS
FACILITY WASTE RECEIVER TANK	SY-102	DN	384 KGALS
		TOTAL AVAILABLE USABLE TANK SPACE	**11096 KGALS**
EVAPORATOR OPERATIONAL TANK SPACE:			-1140 KGALS
SPARE TANK SPACE: ***(DOE Order 5820.2A)***			-2280 KGALS
TOTAL TANK SPACE AVAILABLE AFTER ALL DEDUCTIONS=			**7676 KGALS**

SEG1199

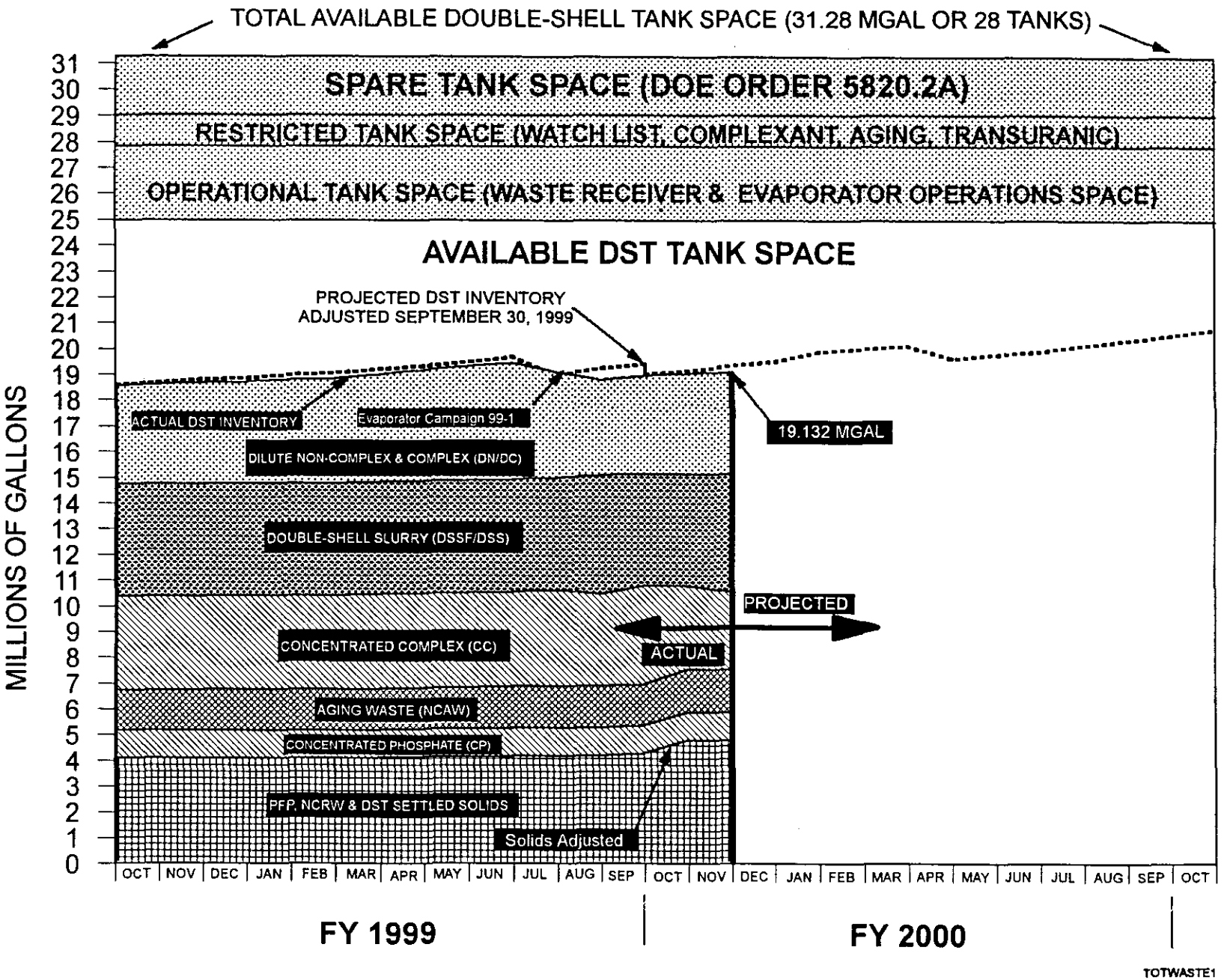


FIGURE B-1. TOTAL DOUBLE-SHELL TANK INVENTORY

APPENDIX C

TANK AND EQUIPMENT CODE AND STATUS DEFINITIONS

C. TANK AND EQUIPMENT CODE/STATUS DEFINITIONS

November 30, 1999

1. TANK STATUS CODES

WASTE TYPE (also see definitions, section 3)

AGING	Aging Waste (Neutralized Current Acid Waste [NCAW])
CC	Complexant Concentrate Waste
CP	Concentrated Phosphate Waste
DC	Dilute Complexed Waste
DN	Dilute Non-Complexed Waste
DSS	Double-Shell Slurry
DSSF	Double-Shell Slurry Feed
NCPLX	Non-Complexed Waste
PD/PN	Plutonium-Uranium Extraction (PUREX) Neutralized Cladding Removal Waste (NCRW), transuranic waste (TRU)
PT	Plutonium Finishing Plant (PFP) TRU Solids

TANK USE (DOUBLE-SHELL TANKS ONLY)

CWHT	Concentrated Waste Holding Tank
DRCVR	Dilute Receiver Tank
EVFD	Evaporate Feed Tank
SRCVR	Slurry Receiver Tank

2. SOLID AND LIQUID VOLUME DETERMINATION METHODS

F	Food Instrument Company (FIC) Automatic Surface Level Gauge
E	ENRAF Surface Level Gauge (being installed to replace FICs)
M	Manual Tape Surface Level Gauge
P	Photo Evaluation
S	Sludge Level Measurement Device

3. DEFINITIONS

WASTE TANKS - GENERAL

Waste Tank Safety Issue

A potentially unsafe condition in the handling of waste material in underground storage tanks that requires corrective action to reduce or eliminate the unsafe condition.

Watch List Tank

An underground storage tank containing waste that requires special safety precautions because it may have a serious potential for release of high level radioactive waste because of uncontrolled increases in temperature or pressure. Special restrictions have been placed on these tanks by "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510, (also known as the Wyden Amendment).

Characterization

Characterization is understanding the Hanford tank waste chemical, physical, and radiological properties to the extent necessary to insure safe storage and interim operation, and ultimate disposition of the waste.

WASTE TYPES

Aging Waste (AGING)
High level, first cycle solvent extraction waste from the PUREX plant (NCAW)

Concentrated Complexant (CC)
Concentrated product from the evaporation of dilute complexed waste.

Concentrated Phosphate Waste (CP)
Waste originating from the decontamination of the N Reactor in the 100 N Area. Concentration of this waste produces concentrated phosphate waste.

Dilute Complexed Waste (DC)
Characterized by a high content of organic carbon including organic complexants: ethylenediaminetetra-acetic acid (EDTA), citric acid, and hydroxyethyl-ethylenediaminetriacetic acid (HEDTA), being the major complexants used. Main sources of DC waste in the DST system are saltwell liquid inventory (from SSTs).

Dilute Non-Complexed Waste (DN)
Low activity liquid waste originating from T and S Plants, the 300 and 400 Areas, PUREX facility (decladding supernatant and miscellaneous wastes), 100 N Area (sulfate waste), B Plant, saltwells, and PFP (supernate).

Double-Shell Slurry (DSS)
Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.

Double-Shell Slurry Feed (DSSF)
Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as DSS.

Non-complexed (NCPLX)
General waste term applied to all Hanford Site (NCPLX) liquors not identified as complexed.

PUREX Decladding (PD)
PUREX Neutralized Cladding Removal Waste (NCRW) is the solids portion of the PUREX plant neutralized cladding removal waste stream; received in Tank Farms as a slurry. NCRW solids are classified as transuranic (TRU) waste.

PFP TRU Solids (PT)
TRU solids fraction from PFP Plant operations.

Drainable Interstitial Liquid (DIL)
Interstitial liquid that is not held in place by capillary forces, and will therefore migrate or move by gravity. (See also Section 4)

Supernate
The liquid above the solids or in large liquid pools covered by floating solids in waste storage tanks. (See also Section 4 below)

Ferrocyanide
A compound of iron and cyanide commonly expressed as FeCN. The actual formula for the ferrocyanide anion is $[Fe(CN)_6]^{-4}$.

INTERIM STABILIZATION (Single-Shell Tanks only)

Interim Stabilized (IS)

A tank which contains less than 50 Kgallons of drainable interstitial liquid and less than 5 Kgallons of supernatant liquid. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow or saltwell screen inflow must also have been at or below 0.05 gpm before interim stabilization criteria is met.

Jet Pump

The jet pump system includes 1) a jet assembly with foot valve mounted to the base of two pipes that extend from the top of the well to near the bottom of the well casing inside the saltwell screen, 2) a centrifugal pump to supply power fluid to the down-hole jet assembly, 3) flexible or rigid transfer jumpers, 4) a flush line, and 5) a flowmeter. The jumpers contain piping, valves, and pressure and limit switches.

The centrifugal pump and jet assembly are needed to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise. The power fluid passes through a nozzle in the jet assembly and acts to convert fluid pressure head to velocity head, thereby reducing the pressure in the jet assembly chamber. The reduction in pressure allows the interstitial liquid to enter the jet assembly chamber and mix with the power fluid. Velocity head is converted to pressure head above the nozzle, lifting power fluid, and interstitial liquid to the pump pit. Pumping rates vary from 0.05 gallons to about 4 gpm.

Saltwell Screen

The saltwell system is a 10-inch diameter saltwell casing consisting of a stainless steel saltwell screen welded to a Schedule 40 carbon steel pipe. The casing and screen are to be inserted into the 12-inch tank riser located in the pump pit. The stainless steel screen portion of the system will extend through the tank waste to near the bottom of the tank. The saltwell screen portion of the casing is an approximately 10-foot length of 300 Series, 10-inch diameter, stainless steel pipe with screen openings (slots) of 0.05 inches.

Emergency Pumping Trailer

A 45-foot tractor-type trailer is equipped to provide storage space and service facilities for emergency pumping equipment: this consists of two dedicated jet pump jumpers and two jet pumps, piping and dip tubes for each, two submersible pumps and attached piping, and a skid-mounted Weight Factor Instrument Enclosure (WFIE) with an air compressor and electronic recording instruments. The skid also contains a power control station for the pumps, pump pit leak detection, and instrumentation. A rack for over 100 feet of overground double-contained piping is also in the trailer.

INTRUSION PREVENTION (ISOLATION) Single-Shell Tanks only

Partially Interim Isolated (PI)

The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for isolation of risers and piping that is required for jet pumping or for other methods of stabilization.

Interim Isolated (II)

The administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. In June 1993, Interim Isolation was replaced by Intrusion Prevention.

Intrusion Prevention (IP)

Intrusion Prevention is the administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank,

or diversion box. Under no circumstances are electrical or instrumentation devices disconnected or disabled during the intrusion prevention process (with the exception of the electrical pump).

Controlled, Clean, and Stable (CCS)

Controlled, Clean, and Stable reflects the completion of several objectives: "Controlled" - provide remote monitoring for required instrumentation and implement controls required in the TWRS Authorization Basis; "Clean" - remove surface soil contamination and downpost the Tank Farms to RBA/URMA/RA radiological control status, remove abandoned equipment, and place reusuable equipment in compliant storage; and "Stable" - remove pumpable liquids from the SSTs and IMUSTs and isolate the tanks.

TANK INTEGRITY

Sound

The integrity classification of a waste storage tank for which surveillance data indicate no loss of liquid attributed to a breach of integrity.

Assumed Leaker

The integrity classification of a waste storage tank for which surveillance data indicate a loss of liquid attributed to a breach of integrity.

Assumed Re-Leaker

A condition that exists after a tank has been declared as an "assumed leaker" and then the surveillance data indicates a new loss of liquid attributed to a breach of integrity.

TANK INVESTIGATION

Intrusion

A term used to describe the infiltration of liquid into a waste tank.

SURVEILLANCE INSTRUMENTATION

Drywells

Drywells are vertical boreholes with 6-inch (internal diameter) carbon steel casings positioned radially around SSTs. These wells range between 50 and 250 feet in depth, and are monitored between the range of 50 to 150 feet. The wells are sealed when not in use. They are called drywells because they do not penetrate to the water table and are therefore usually "dry." There are 759 drywells.

Monitoring is done by gamma radiation or neutron-moisture sensors to obtain scan profiles of radiation or moisture in the soil as a function of well depth, which could be indicative of tank leakage.

Two single-shell tanks (C-105 and C-106) are currently monitored monthly by gamma radiation sensors. The remaining drywells are monitored on request by gamma radiation sensors. Monitoring by neutron-moisture sensors is done only on request.

Laterals

Laterals are horizontal drywells positioned under single-shell waste storage tanks to detect radionuclides in the soil which could be indicative of tank leakage. These drywells can be monitored by radiation detection probes. Laterals are 4-inch inside diameter steel pipes located 8 to 10 feet below the tank's concrete base. There are three laterals per tank. Laterals are located only in A and SX farms. There are currently no functioning laterals and no plan to prepare them for use.

Surface Levels

The surface level measurements in all waste storage tanks are monitored by manual or automatic conductivity probes, and recorded and transmitted or entered into the Surveillance Analysis Computer System (SACS).

Automatic FIC

An automatic waste surface level measurement device is manufactured by the Food Instrument Company (FIC). The instrument consists of a conductivity electrode (plummet) connected to a calibrated steel tape, a steel tape reel housing and a controller that automatically raises and lowers the plummet to obtain a waste surface level reading. The controller can provide a digital display of the data and until February 1999, the majority of the FICs transmitted readings to the CASS. Since CASS retirement, all FIC gauges are read manually. FICs are being replaced by ENRAF detectors (see below).

ENRAF 854 ATG Level Detector

FICs and some manual tapes are in the process of being replaced by the ENRAF ATG 854 level detector. The ENRAF gauge, fabricated by ENRAF Incorporated, determines waste level by detecting variations in the weight of a displacer suspended in the tank waste. The displacer is connected to a wire wound onto a precision measuring drum. A level causes a change in the weight of the displacer which will be detected by the force transducer. Electronics within the gauge causes the servo motor to adjust the position of the displacer and compute the tank level based on the new position of the displacer drum. The gauge displays the level in decimal inches. The first few ENRAFs that received remote reading capability transmit liquid level data via analog output to the Tank Monitor and Control System (TMACS). The remaining ENRAFs and future installations will transmit digital level data to TMACS via an ENRAF Computer Interface Unit (CIU). The CIU allows fully remote communication with the gauge, minimizing tank farm entry.

Annulus

The annulus is the space between the inner and outer shells on DSTs only. Drain channels in the insulating and/or supporting concrete carry any leakage to the annulus space where conductivity probes are installed. The annulus conductivity probes and radiation detectors are the primary means of leak detection for all DSTs.

Liquid Observation Well (LOW)

In-tank liquid observation wells are used for monitoring the interstitial liquid level (ILL) in single-shell waste storage tanks. The wells are usually constructed of fiberglass or TEFZEL-reinforced epoxy-polyester resin (TEFZEL, a trademark of E. I. du Pont de Nemours & Company). There are a few LOWs constructed of steel. LOWs are sized to extend to within 1 inch of the bottom of the waste tank, are sealed at their bottom ends and have a nominal outside diameter of 3.5 inches. Two probes are used to monitor changes in the ILL; gamma and neutron, which can indicate intrusions or leakage by increases or decreases in the ILL. There are 65 LOWs (64 are in operation) installed in SSTs that contain or are capable of containing greater than 50 Kgallons of drainable interstitial liquid, and in two DSTs only. The LOWs installed in two DSTs, (SY-102 and AW-103 tanks), are used for special, rather than routine, surveillance purposes only.

Thermocouple (TC)

A thermocouple is a thermoelectric device used to measure temperature. More than one thermocouple on a device (probe) is called a thermocouple tree. In DSTs there may be one or more thermocouple trees in risers in the primary tank. In addition, in DSTs only, there are thermocouple elements installed in the insulating concrete, the lower primary tank knuckle, the secondary tank concrete foundation, and in the outer structural concrete.

These monitor temperature gradients within the concrete walls, bottom of the tank, and the domes. In SSTs, one or more thermocouples may be installed directly in a tank, although some SSTs do not have any trees installed. A single thermocouple (probe) may be installed in a riser, or lowered down an existing

riser or LOW. There are also four thermocouple laterals beneath Tank 105-A in which temperature readings are taken in 34 thermocouples.

In-tank Photographs and Videos

In-tank photographs and videos may be taken to aid in resolving in-tank measurement anomalies and determine tank integrity. Photographs and videos help determine sludge and liquid levels by visual examination.

TERMS/ACRONYMS

CCS Controlled, Clean and Stable (tank farms)

FSAR Final Safety Analysis Report (replaces BIOS, effective October 18, 1999)

II Interim Isolated

IP Intrusion Prevention Completed

IS Interim Stabilized

MT/FIC/ENRAF Manual Tape, Food Instrument Corporation, ENRAF Corporation (surface level measurement devices)

OSD Operating Specifications Document

PI Partial Interim Isolated

SAR Safety Analysis Reports

SHMS Standard Hydrogen Monitoring System

TMACS Tank Monitor and Control System

TPA Hanford Federal Facility Consent and Compliance Order, "Washington State Department of Ecology, U. S. Environmental Protection Agency, and U. S. Department of Energy," Fourth Amendment, 1994 (Tri-Party Agreement)

USQ Unreviewed Safety Question

Wyden Amendment "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the National Defense Authorization Act for Fiscal Year 1991, November 5, 1990, Public Law 101-510.

4. INVENTORY AND STATUS BY TANK – COLUMN VOLUME CALCULATIONS AND DEFINITIONS FOR TABLE E-6 (SINGLE-SHELL TANKS)

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Total Waste	Solids volume plus Supernatant liquid. Solids include sludge and saltcake (see definitions below).

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Supernate (1)	May be either measured or estimated. Supernate is either the estimated or measured liquid floating on the surface of the waste or under a floating solids crust. In-tank photographs or videos are useful in estimating the liquid volumes; liquid floating on solids and core sample data are useful in estimating large liquid pools under a floating crust.
Drainable Interstitial Liquid (DIL) (1)	This is initially calculated. Drainable interstitial liquid is calculated based on the saltcake and sludge volumes, using calculated porosity values from past pumping or actual data for each tank. Interstitial liquid is liquid that fills the interstitial spaces of the solids waste. The sum of the interstitial liquid contained in saltcake and sludge minus an adjustment for capillary height is the initial volume of drainable interstitial liquid.
Pumped This Month	Net total gallons of liquid pumped from the tank during the month. If supernate is present, pump production is first subtracted from the supernatant volume. The remainder is then subtracted from the drainable interstitial liquid volume.
Total Pumped (1)	Cumulative net total gallons of liquid pumped from 1979 to date.
Drainable Liquid Remaining (DLR) (1)	Supernate plus Drainable Interstitial Liquid. The total Drainable Liquid Remaining is the sum of drainable interstitial liquid and supernate.
Pumpable Liquid Remaining (PLR) (1)	Drainable Liquid Remaining minus unpumpable volume. Not all drainable interstitial liquid is pumpable.
Sludge	Solids formed during sodium hydroxide additions to waste. Sludge usually was in the form of suspended solids when the waste was originally received in the tank from the waste generator. In-tank photographs or videos may be used to estimate the volume.
Saltcake	Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator. If saltcake is layered over sludge, it is only possible to measure total solids volume. In-tank photographs or videos may be used to estimate the saltcake volume.
Solids Volume Update	Indicates the latest update of any change in the solids volume.
Solids Update Source - See Footnote	Indicates the source or basis of the latest solids volume update.
Last In-tank Photo	Date of last in-tank photographs taken.
Last In-tank Video	Date of last in-tank video taken.
See Footnotes for These Changes	Indicates any change made the previous month. A footnote explanation for the change follows the Inventory and Status by Tank Appendix (Table E-6).

(1) As pumping continues, supernate, DIL, DLR, PLR, and total gallons pumped are adjusted accordingly based on actual pump volumes.

APPENDIX D

TANK FARM CONFIGURATION, STATUS, AND FACILITIES CHARTS

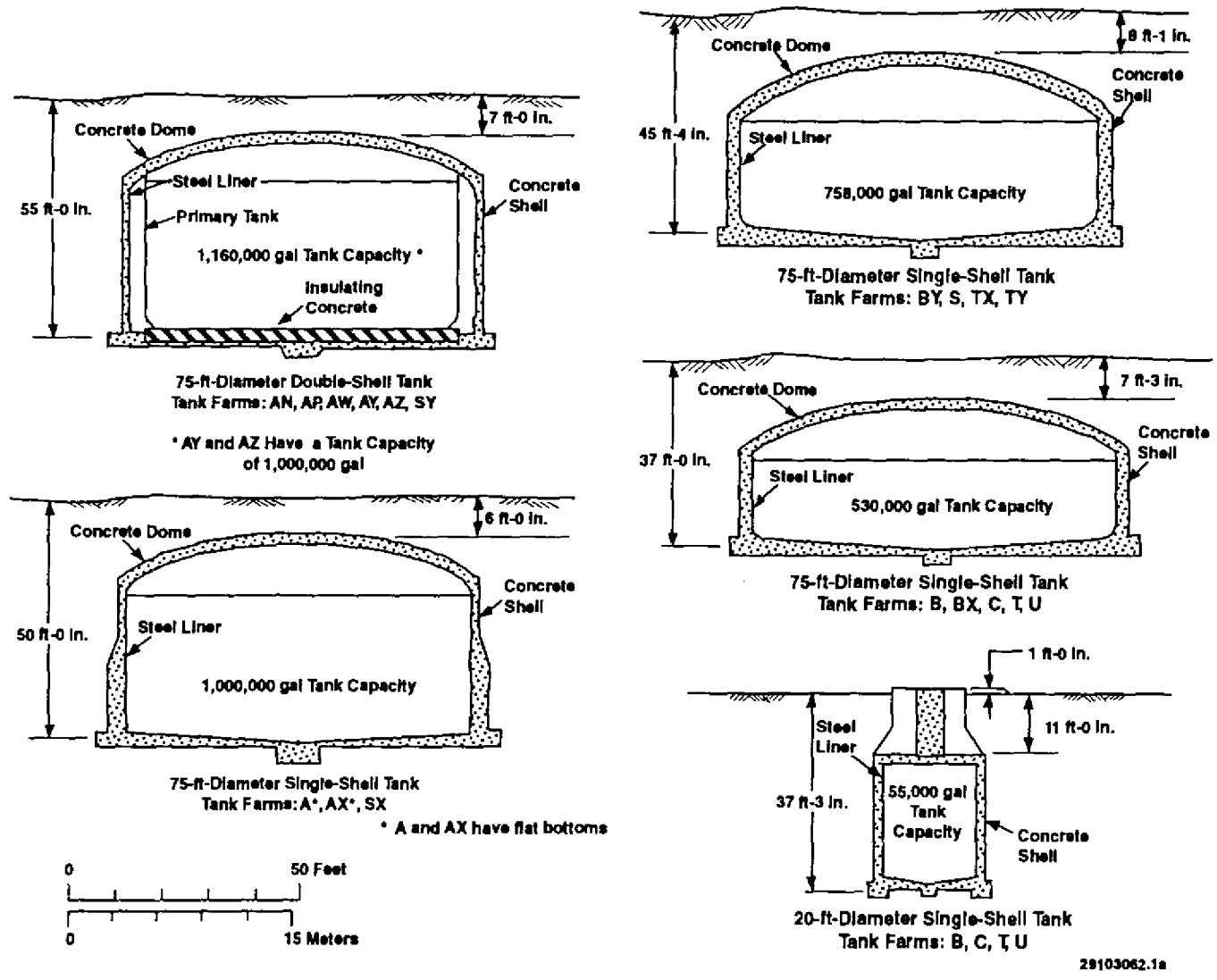


FIGURE D-1. HIGH-LEVEL WASTE TANK CONFIGURATION

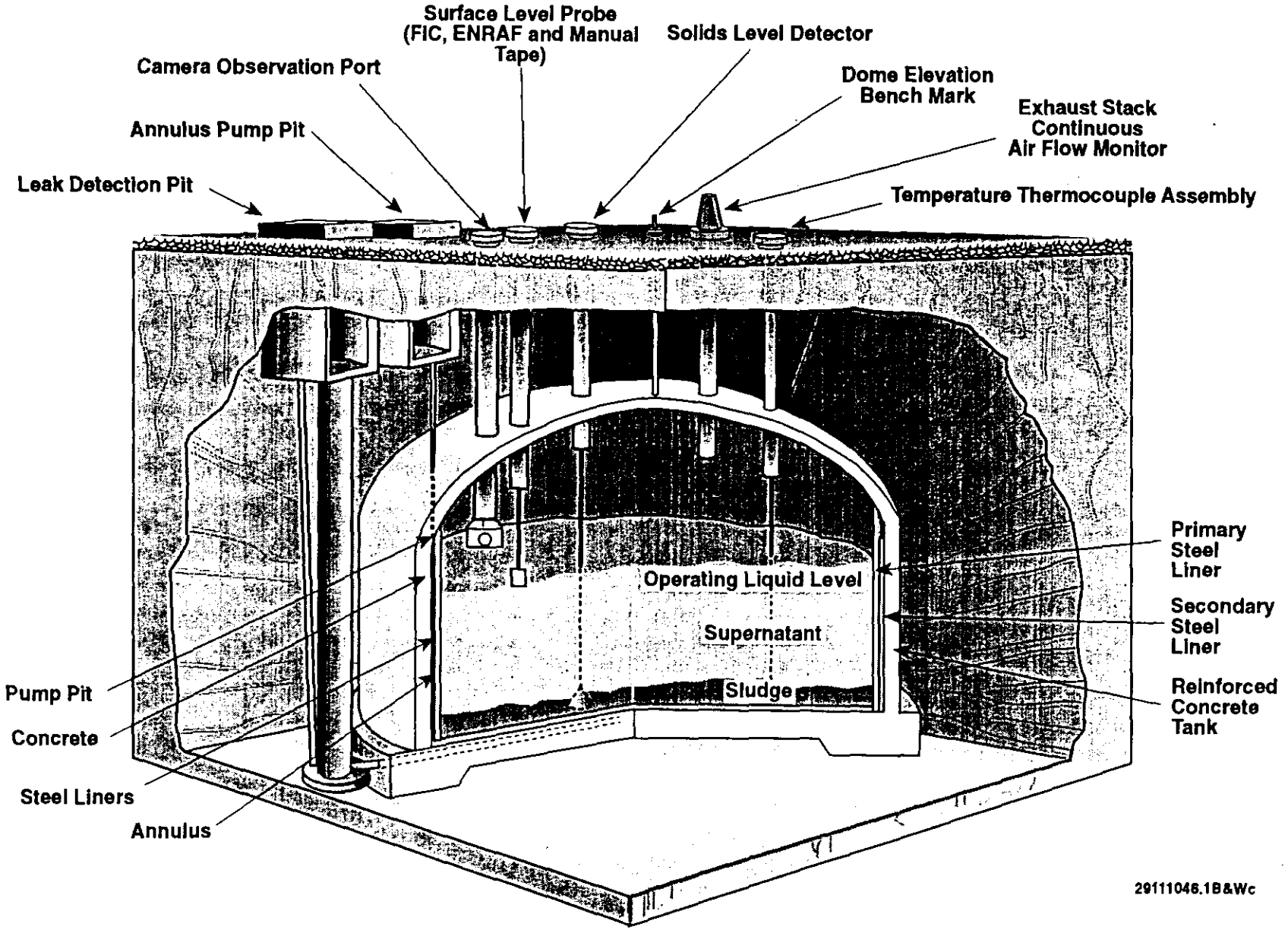


FIGURE D-2. DOUBLE-SHELL TANK INSTRUMENTATION CONFIGURATION

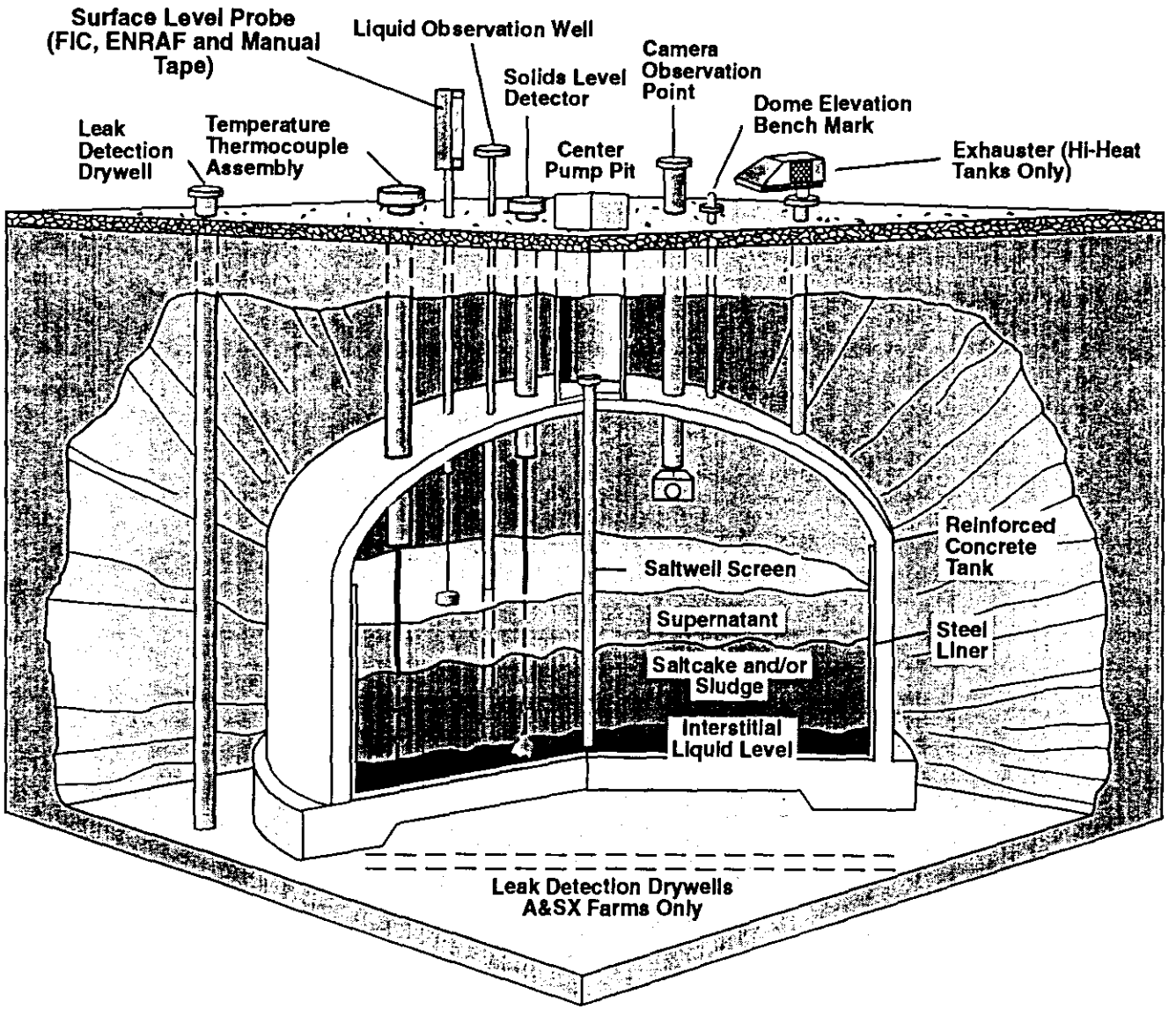


FIGURE D-3. SINGLE-SHELL TANK INSTRUMENTATION CONFIGURATION

THE HANFORD TANK FARM FACILITIES CHARTS (colored foldouts)

ARE ONLY BEING INCLUDED IN THIS REPORT ON A QUARTERLY BASIS

(i.e., months ending March 31, June 30, September 30, December 31)

NOTE: COPIES OF THE FACILITIES CHARTS CAN BE OBTAINED

FROM DENNIS BRUNSON, MULTI-MEDIA SERVICES

376-2345, G3-51

ALMOST ANY SIZE IS AVAILABLE, AND CAN BE LAMINATED

P-Card required

APPENDIX E

MONTHLY SUMMARY
TANK USE SUMMARY
PUMPING RECORD, LIQUID STATUS AND PUMPABLE
LIQUID REMAINING IN TANK FARMS
INVENTORY SUMMARY BY TANK FARM
INVENTORY AND STATUS BY TANK

TABLE E-1. MONTHLY SUMMARY

TANK STATUS

November 30, 1999

	200 EAST AREA	200 WEST AREA	TOTAL
IN SERVICE	25	03	28 (1)
OUT OF SERVICE	66	83	149
SOUND	59	51	110
ASSUMED LEAKER	32	35	67
INTERIM STABILIZED	60	60	120
ISOLATED			
PARTIAL INTERIM	11	30	41
INTRUSION PREVENTION COMPLETE	55	53	108
CONTROLLED, CLEAN, AND STABLE	12	24	36

WASTE VOLUMES (Kgallons)

		200 EAST AREA	200 WEST AREA	TOTAL	SST TANKS	DST TANKS	TOTAL
SUPERNATANT							
AGING	Aging waste	1653	0	1653	0	1653	1653
CC	Complexant concentrate waste	2030	975	3005	0	3005	3005
CP	Concentrated phosphate waste	1092	0	1092	0	1092	1092
DC	Dilute complexed waste	486	0	486	1	485	486
DN	Dilute non-complexed waste	2788	0	2788	0	2788	2788
DN/PD	Dilute non-complex/PUREX TRU solid	321	0	321	0	321	321
DN/PT	Dilute non-complex/PFP TRU solids	0	685	685	0	685	685
NCPLX	Non-complexed waste	216	302	518	518	0	518
DSSF	Double-shell slurry feed	5254	167	5421	1070	4351	5421
TOTAL SUPERNATANT		13840	2129	15969	1589	14380	15969
SOLIDS							
	Double-shell slurry	457	0	457	0	457	457
	Sludge	6622	5960	12582	11496	1086	12582
	Saltcake	7489	16385	23874	20665	3209	23874
TOTAL SOLIDS		14568	22345	36913	32161	4752	36913
TOTAL WASTE		28408	24474	52882	33750	19132	52882
AVAILABLE SPACE IN TANKS		11410	781	12191	0	12191	12191
DRAINABLE INTERSTITIAL		1990	3010	5000	3677	1323	5000
DRAINABLE LIQUID REMAINING (2)		2145	3080	5225	5230	(2)	5230

(1) Includes six double-shell tanks on Hydrogen Watch List not currently allowed to receive waste, AN-103, AN-104, AN-105, AW-101, SY-101, and SY-103.

(2) Drainable Liquid Remaining for single-shell tanks only; not applicable for double-shell tanks

TABLE E-2. TANK USE SUMMARY

November 30, 1999

TANK FARMS	TANKS AVAILABLE TO RECEIVE WASTE TRANSERS	SOUND	ASSUMED LEAKER	ISOLATED TANKS			
				PARTIAL INTERIM	INTRUSION PREVENTION COMPLETED	CONTROLLED CLEAN, AND STABLE	INTERIM TABILIZED TANKS
EAST							
A	0	3	3	2	4	0	5
AN	7 (1)	7	0	0	0		0
AP	8	8	0	0	0		0
AW	6 (1)	6	0	0	0		0
AX	0	2	2	1	3		3
AY	2	2	0	0	0		0
AZ	2	2	0	0	0		0
B	0	6	10	0	16		16
BX	0	7	5	0	12	12	12
BY	0	7	5	5	7		10
C	0	9	7	3	13		14
Total	**25**	**59**	**32**	**11**	**55**	**12**	**60**
WEST							
S	0	11	1	10	2		4
SX	0	5	10	6	9		9
SY	3 (1)	3	0	0	0		0
T	0	9	7	5	11		14
TX	0	10	8	0	18	18	18
TY	0	1	5	0	6	6	6
U	0	12	4	9	7		8
Total	**3**	**51**	**35**	**30**	**53**	**24**	**60**
TOTAL	**28**	**110**	**67**	**41**	**108**	**36**	**120**

(1) Six Double-Shell Tanks on the Hydrogen Tank Watch List are not currently receiving waste transfers (AN-103, 104, 105, AW-101, SY-101 and 103).

TABLE E-3. PUMPING RECORD, LIQUID STATUS AND PUMPABLE LIQUID REMAINING IN TANK FARMS

November 30, 1999

	Waste Volumes (Kgallons)						
TANK FARMS	PUMPED THIS MONTH	PUMPED FY TO DATE	CUMULATIVE TOTAL PUMPED 1979 TO DATE	SUPERNATANT LIQUID	DRAINABLE INTERSTITIAL REMAINING	DRAINABLE LIQUID REMAINING	PUMPABLE SST LIQUID REMAINING
EAST							
A	0.0	0.0	150.5	517	107	624	587
AN	N/A	N/A	N/A	3654	513	N/A	N/A
AP	N/A	N/A	N/A	4640	25	N/A	N/A
AW	N/A	N/A	N/A	2316	361	N/A	N/A
AX	0.0	0.0	13.0	386	108	497	450
AY	N/A	N/A	N/A	457	23	N/A	N/A
AZ	N/A	N/A	N/A	1653	3	N/A	N/A
B	0.0	0.0	0.0	15	191	206	107
BX	N/A	0.0	200.2	24	107	N/A	N/A
BY	0.0	0.0	1567.8	0	390	390	282
C	0.0	0.0	103.0	178	162	296	212
Total	0.0	0.0	2034.5	13840	1990	2013	1638
WEST							
S	8.6	16.1	1023.8	138	773	911	839
SX	3.6	14.3	378.6	134	628	765	701
SY	N/A	N/A	N/A	1660	398	N/A	N/A
T	0.0	0.0	245.7	28	170	198	126
TX	N/A	0.0	1205.7	9	250	N/A	N/A
TY	N/A	0.0	29.9	3	31	N/A	N/A
U	1.4	40.3	52.3	157	760	917	882
Total	13.6	70.7	2936.0	2129	3010	2791	2548
TOTAL	13.6	70.7	4970.5	15969	5000	4804	4186

N/A = Not applicable for Double-Shell Tank Farms, and Single-Shell Tank Farms which have been declared Controlled, Clean and Stable (BX, TX, TY).

TABLE E-4. INVENTORY SUMMARY BY TANK FARM

November 30, 1999

TANK FARM	TOTAL WASTE	AVAIL SPACE	SUPERNATANT LIQUID VOLUMES (Kgallons) AGING	CC	CP	DC	DN	DN/PD	DN/PT	NCPLX	DSSE	TOTAL	SOLIDS VOLUME DSS	SLUDGE	SALT CAKE	TOTAL
EAST																
A	1507	0	0	0	0	0	0	0	0	0	517	517	0	588	402	990
AN	5435	2545	0	1786	0	0	127	0	0	0	1741	3654	457	0	1324	1781
AP	4729	4391	0	0	1092	383	1375	0	0	0	1790	4640	0	0	89	89
AW	3732	3108	0	244	0	44	887	321	0	0	820	2316	0	571	845	1416
AX	834	0	0	0	0	0	0	0	0	0	386	386	0	26	422	448
AY	767	1193	0	0	0	58	399	0	0	0	0	457	0	310	0	310
AZ	1787	173	1653	0	0	0	0	0	0	0	0	1653	0	134	0	134
B	1909	0	0	0	0	0	0	0	0	15	0	15	0	1327	567	1894
BX	1496	0	0	0	0	0	0	0	0	24	0	24	0	1265	207	1472
BY	4387	0	0	0	0	0	0	0	0	0	0	0	0	754	3633	4387
C	1825	0	0	0	0	1	0	0	0	177	0	178	0	1647	0	1647
Total	**28408**	**11410**	**1653**	**2030**	**1092**	**486**	**2788**	**321**	**0**	**216**	**5254**	**13840**	**457**	**6622**	**7489**	**14568**
WEST																
S	4962	0	0	0	0	0	0	0	0	138	0	138	0	1185	3639	4824
SX	4028	0	0	0	0	0	0	0	0	0	134	134	0	1064	2830	3894
SY	2682	781	0	975	0	0	0	0	685	0	0	1660	0	71	951	1022
T	1855	0	0	0	0	0	0	0	0	28	0	28	0	1682	145	1827
TX	6778	0	0	0	0	0	0	0	0	9	0	9	0	893	5876	6769
TY	642	0	0	0	0	0	0	0	0	3	0	3	0	529	110	639
U	3527	0	0	0	0	0	0	0	0	124	33	157	0	536	2834	3370
Total	**24474**	**781**	**0**	**975**	**0**	**0**	**0**	**0**	**685**	**302**	**167**	**2129**	**0**	**5960**	**16385**	**22345**
TOTAL	**52882**	**12191**	**1653**	**3005**	**1092**	**486**	**2788**	**321**	**685**	**518**	**5421**	**15969**	**457**	**12582**	**23874**	**36913**

TABLE E-5. INVENTORY AND STATUS BY TANK - DOUBLE SHELL TANKS

November 30, 1999

TANK STATUS							LIQUID VOLUME		SOLIDS VOLUME			VOLUME DETERMINATION			PHOTOS/VIDEOS		
TANK	WAST MATL	TANK INTEGRITY	TANK USE	EQUIVA-LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL. SPACE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	DSS (Kgal)	SLUDGE	SALT CAKE	LIQUID VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTE FOR THESE CHANGES
AN TANK FARM STATUS																	
AN-101	DN	SOUND	DRCVR	58.2	160	980	127	0	0	0	33	FM	S	06/30/99	0/ 0/ 0		
AN-102	CC	SOUND	CWHT	384.7	1058	82	969	25	0	0	89	FM	S	06/30/99	0/ 0/ 0		
AN-103	DSS	SOUND	CWHT	348.0	957	183	500	0	457	0	0	FM	S	06/30/99	10/29/87		
AN-104	DSSF	SOUND	CWHT	382.9	1053	87	604	187	0	0	449	FM	S	06/30/99	08/19/88		
AN-105	DSSF	SOUND	CWHT	409.5	1126	14	637	205	0	0	489	FM	S	06/30/99	01/26/88		
AN-106	CC	SOUND	CWHT	13.8	38	1102	21	0	0	0	17	FM	S	06/30/99	0/ 0/ 0		
AN-107	CC	SOUND	CWHT	379.3	1043	97	796	96	0	0	247	FM	S	06/30/99	09/01/88		
7 DOUBLE-SHELL TANKS				TOTALS	5435	2545	3654	513	457	0	1324						
AP TANK FARM STATUS																	
AP-101	DSSF	SOUND	DRCVR	405.5	1115	25	1115	0	0	0	0	FM	S	05/01/89	0/ 0/ 0		
AP-102	CP	SOUND	GRTFD	397.1	1092	48	1092	0	0	0	0	FM	S	07/11/89	0/ 0/ 0		
AP-103	DN	SOUND	DRCVR	102.9	283	857	283	0	0	0	0	FM	S	05/31/96	0/ 0/ 0		
AP-104	DN	SOUND	GRTFD	8.7	24	1116	24	0	0	0	0	FM	S	10/13/88	0/ 0/ 0		
AP-105	DSSF	SOUND	CWHT	277.8	764	376	675	25	0	0	89	FM	S	06/30/99	0/ 0/ 0	09/27/95	
AP-106	DN	SOUND	DRCVR	33.8	93	1047	93	0	0	0	0	FM	S	10/13/88	0/ 0/ 0		
AP-107	DN	SOUND	DRCVR	354.5	975	165	975	0	0	0	0	FM	S	10/13/88	0/ 0/ 0		
AP-108	DC	SOUND	DRCVR	139.3	383	757	383	0	0	0	0	FM	S	10/13/88	0/ 0/ 0		
8 DOUBLE-SHELL TANKS				TOTALS	4729	4391	4640	25	0	0	89						
AW TANK FARM STATUS																	
AW-101	DSSF	SOUND	CWHT	409.5	1126	14	820	123	0	0	306	FM	S	06/30/99	03/17/88		
AW-102	DC	SOUND	EVFD	29.8	82	1058	46	1	0	0	36	FM	S	06/30/99	02/02/83		
AW-103	DN/PD	SOUND	DRCVR	185.5	510	630	147	38	0	316	47	FM	S	06/30/99	0/ 0/ 0		
AW-104	DN	SOUND	DRCVR	406.5	1118	22	887	89	0	0	231	FM	S	06/30/99	02/02/83		
AW-105	DN/PD	SOUND	DRCVR	156.0	429	711	174	24	0	255	0	FM	S	06/30/99	0/ 0/ 0		
AW-106	CC	SOUND	SRCVR	169.8	467	673	242	86	0	0	225	FM	S	06/30/99	02/02/83		
6 DOUBLE-SHELL TANKS				TOTALS	3732	3108	2316	361	0	571	845						

TABLE E-5. INVENTORY AND STATUS BY TANK - DOUBLE SHELL TANKS

November 30, 1999

TANK STATUS							LIQUID VOLUME		SOLIDS VOLUME			VOLUME DETERMINATION			PHOTOS/VIDEOS		
TANK	WAST MATL	TANK INTEGRITY	TANK USE	EQUIVA-LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL. SPACE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	DSS (Kgal)	SLUDGE	SALT CAKE	LIQUID VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTE FOR THESE CHANGES
AY TANK FARM STATUS																	
AY-101	DC	SOUND	DRCVR	55.3	152	828	58	4	0	94	0	FM	S	06/30/99	12/28/82		
AY-102	DN	SOUND	DRCVR	223.6	615	365	399	19	0	216	0	FM	S	11/30/99	04/28/81		(b)
2 DOUBLE-SHELL TANKS				TOTALS	767	1193	457	23	0	310	0						
AZ TANK FARM STATUS																	
AZ-101	AGING	SOUND	CWHT	307.6	846	134	800	0	0	46	0	FM	S	06/30/99	08/18/83		
AZ-102	AGING	SOUND	DRCVR	342.2	941	39	853	3	0	88	0	FM	S	06/30/99	10/24/84		
2 DOUBLE-SHELL TANKS				TOTALS	1787	173	1653	3	0	134	0						
SY TANK FARM STATUS																	
SY-101	CC	SOUND	CWHT	430.2	1183	0	598	248	0	0	585	FM	S	06/30/99	04/12/89		(a)
SY-102	DN/PT	SOUND	DRCVR	274.9	756	384	685	0	0	71	0	FM	S	06/30/99	04/29/81		
SY-103	CC	SOUND	CWHT	270.2	743	397	377	150	0	0	366	FM	S	06/30/99	10/01/85		
3 DOUBLE-SHELL TANKS				TOTALS	2682	781	1660	398	0	71	951						
GRAND TOTAL					19132	12191	14380	1323	457	1086	3209						

Note: +/- 1 Kgal differences are the result of computer rounding

Available Space Calculations Used in this Document

Tank Farms	
AN, AP, AW, SY	1,140 Kgal
AY, AZ (Aging Waste)	980 Kgal

NOTE: Tanks AN-102, AN-107, AY-101 and AP-104 are still outside the corrosion control specifications limits for hydroxide. Note that the supernate in AY-102 is within the corrosion specifications, however, the pre-sluicing C-106 solids in AY-102 may still be outside the corrosion control compliance range for hydroxide. An alternate strategy of corrosion control (i.e., monitor tank waste using corrosion probes) is being proposed but has not been fully evaluated. Waste mitigation may be performed either by chemical adjustment or waste transfer/co-mingling of waste with high hydroxide.

(a) Tank SY-101 - Total Waste exceeds the "most conservative" Available Space calculations used for these tanks in this document.

(b) Tank AY-102 - Sludge volume changed in this tank due to sluicing from tank C-106, per HNF-5267, "Waste Retrieval SluicingCampaign Number 3 Solids Volume Transferred Calculation," Rev 2, dated November 17, 1999.

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		VOLUME DETERMINATION			PHOTOS/VIDEOS		
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
A TANK FARM STATUS																		
A-101	DSSF	SOUND	/PI	891	508	79	0.0	0.0	587	587	3	380	P	F	09/30/99	08/21/85		
A-102	DSSF	SOUND	IS/PI	41	4	2	0.0	39.5	6	0	15	22	P	FP	07/27/89	07/20/89		
A-103	DSSF	ASMD LKR	IS/IP	371	5	15	0.0	111.0	20	0	366	0	-	FP	06/03/88	12/28/88		
A-104	NCPLX	ASMD LKR	IS/IP	28	0	0	0.0	0.0	0	0	28	0	M	PS	01/27/78	06/25/86		
A-105	NCPLX	ASMD LKR	IS/IP	51	0	4	0.0	0.0	4	0	51	0	P	MP	06/30/99	08/20/86		
A-106	CP	SOUND	IS/IP	125	0	7	0.0	0.0	7	0	125	0	P	M	09/07/82	08/19/86		
6 SINGLE-SHELL TANKS			TOTALS	1507	517	107	0.0	150.5	624	587	588	402						
AX TANK FARM STATUS																		
AX-101	DSSF	SOUND	/PI	684	386	58	0.0	0.0	444	444	3	295	P	F	09/30/99	08/18/87		
AX-102	CC	ASMD LKR	IS/IP	30	0	14	0.0	13.0	17	3	7	23	F	S	06/30/99	06/05/89		
AX-103	CC	SOUND	IS/IP	112	0	36	0.0	0.0	36	3	8	104	F	S	06/30/99	08/13/87		
AX-104	NCPLX	ASMD LKR	IS/IP	8	0	0	0.0	0.0	0	0	8	0	P	M	06/30/99	08/18/87		
4 SINGLE-SHELL TANKS			TOTALS:	834	386	108	0.0	13.0	497	450	26	422						
B TANK FARM STATUS																		
B-101	NCPLX	ASMD LKR	IS/IP	113	0	6	0.0	0.0	6	0	0	113	P	F	06/30/99	05/19/83		
B-102	NCPLX	SOUND	IS/IP	32	4	0	0.0	0.0	4	0	0	28	P	F	06/30/99	08/22/85		
B-103	NCPLX	ASMD LKR	IS/IP	59	0	0	0.0	0.0	0	0	0	59	F	F	06/30/99	10/13/88		
B-104	NCPLX	SOUND	IS/IP	371	1	44	0.0	0.0	45	38	309	61	M	M	06/30/99	10/13/88		
B-105	NCPLX	ASMD LKR	IS/IP	158	0	23	0.0	0.0	23	0	28	130	P	MP	06/30/99	05/19/88		
B-106	NCPLX	SOUND	IS/IP	117	1	6	0.0	0.0	7	0	116	0	F	F	03/31/85	02/28/85		
B-107	NCPLX	ASMD LKR	IS/IP	165	1	12	0.0	0.0	13	7	93	71	M	M	06/30/99	02/28/85		
B-108	NCPLX	SOUND	IS/IP	94	0	4	0.0	0.0	4	0	53	41	F	F	06/30/99	05/10/85		
B-109	NCPLX	SOUND	IS/IP	127	0	8	0.0	0.0	8	0	63	64	M	M	06/30/99	04/02/85		
B-110	NCPLX	ASMD LKR	IS/IP	246	1	37	0.0	0.0	38	32	245	0	MP	MP	02/28/85	03/17/88		
B-111	NCPLX	ASMD LKR	IS/IP	237	1	35	0.0	0.0	36	30	236	0	F	F	06/28/85	06/26/85		
B-112	NCPLX	ASMD LKR	IS/IP	33	3	0	0.0	0.0	3	0	30	0	F	F	05/31/85	05/29/85		
B-201	NCPLX	ASMD LKR	IS/IP	29	1	3	0.0	0.0	4	0	28	0	M	M	04/28/82	11/12/86	06/23/95	
B-202	NCPLX	SOUND	IS/IP	27	0	3	0.0	0.0	3	0	27	0	P	M	05/31/85	05/29/85	06/15/95	
B-203	NCPLX	ASMD LKR	IS/IP	51	1	5	0.0	0.0	6	0	50	0	PM	PM	05/31/84	11/13/86		
B-204	NCPLX	ASMD LKR	IS/IP	50	1	5	0.0	0.0	6	0	49	0	P	M	05/31/84	10/22/87		
16 SINGLE-SHELL TANKS			TOTALS	1909	15	191	0.0	0.0	206	107	1327	567						

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		VOLUME DETERMINATION			PHOTOS/VIDEOS		
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
BX TANK FARM STATUS																		
BX-101	NCPLX	ASMD LKR	IS/IP/CCS	43	1	0	0.0	0.0	1	0	42	0	P	M	04/28/82	11/24/88	11/10/94	
BX-102	NCPLX	ASMD LKR	IS/IP/CCS	96	0	4	0.0	0.0	4	0	96	0	P	M	04/28/82	09/18/85		
BX-103	NCPLX	SOUND	IS/IP/CCS	71	9	0	0.0	0.0	9	0	62	0	P	F	11/29/83	10/31/86	10/27/94	
BX-104	NCPLX	SOUND	IS/IP/CCS	99	3	30	0.0	17.4	33	27	96	0	F	F	09/22/89	09/21/89		
BX-105	NCPLX	SOUND	IS/IP/CCS	51	5	6	0.0	15.0	11	4	46	0	F	S	06/30/99	10/23/86		
BX-106	NCPLX	SOUND	IS/IP/CCS	38	0	0	0.0	14.0	0	0	38	0	MP	PS	08/01/95	05/19/88	07/17/95	
BX-107	NCPLX	SOUND	IS/IP/CCS	345	1	29	0.0	23.1	30	23	344	0	MP	P	09/18/90	09/11/90		
BX-108	NCPLX	ASMD LKR	IS/IP/CCS	26	0	1	0.0	0.0	1	0	26	0	M	PS	07/31/79	05/05/94		
BX-109	NCPLX	SOUND	IS/IP/CCS	193	0	13	0.0	8.2	13	8	193	0	FP	P	09/17/90	09/11/90		
BX-110	NCPLX	ASMD LKR	IS/IP/CCS	207	3	16	0.0	1.5	19	13	133	71	MP	M	06/30/99	07/15/94	10/13/94	
BX-111	NCPLX	ASMD LKR	IS/IP/CCS	162	1	1	0.0	116.9	3	1	25	136	M	M	06/30/99	05/19/94	02/28/95	
BX-112	NCPLX	SOUND	IS/IP/CCS	165	1	7	0.0	4.1	8	2	164	0	FP	P	09/17/90	09/11/90		
12 SINGLE-SHELL TANKS			TOTALS:	1496	24	107	0.0	200.2	132	78	1265	207						
BY TANK FARM STATUS																		
BY-101	NCPLX	SOUND	IS/IP	387	0	5	0.0	35.8	5	0	109	278	P	M	05/30/84	09/19/89		
BY-102	NCPLX	SOUND	IS/PI	277	0	11	0.0	159.0	11	0	0	277	MP	M	05/01/95	09/11/87	04/11/95	
BY-103	NCPLX	ASMD LKR	IS/PI	400	0	38	0.0	95.9	38	32	9	391	MP	M	06/30/99	09/07/89	02/24/97	
BY-104	NCPLX	SOUND	IS/IP	326	0	18	0.0	329.5	18	0	150	176	P	M	06/30/99	04/27/83		
BY-105	NCPLX	ASMD LKR	/PI	503	0	111	0.0	0.0	111	111	48	455	P	MP	08/31/99	07/01/86		
BY-106	NCPLX	ASMD LKR	/PI	562	0	119	0.0	63.7	119	119	84	478	P	MP	12/31/98	11/04/82		
BY-107	NCPLX	ASMD LKR	IS/IP	266	0	25	0.0	56.4	25	0	40	226	P	MP	06/30/99	10/15/86		
BY-108	NCPLX	ASMD LKR	IS/IP	228	0	9	0.0	27.5	9	0	154	74	MP	M	04/28/82	10/15/86		
BY-109	NCPLX	SOUND	IS/PI	290	0	37	0.0	157.1	37	20	57	233	F	PS	07/06/87	06/18/97		
BY-110	NCPLX	SOUND	IS/IP	398	0	9	0.0	213.3	9	0	103	295	M	S	09/10/79	07/26/84		
BY-111	NCPLX	SOUND	IS/IP	459	0	0	0.0	313.2	0	0	0	459	P	M	06/30/99	10/31/86		
BY-112	NCPLX	SOUND	IS/IP	291	0	8	0.0	116.4	8	0	0	291	P	M	06/30/99	04/14/88		
12 SINGLE-SHELL TANKS			TOTALS:	4387	0	390	0.0	1567.8	390	282	754	3633						

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		VOLUME DETERMINATION					
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
C TANK FARM STATUS																		
C-101	NCPLX	ASMD LKR	IS/IP	88	0	3	0.0	0.0	3	0	88	0	M	M	11/29/83	11/17/87		
C-102	DC	SOUND	IS/IP	316	0	30	0.0	46.7	30	17	316	0	F	FP	09/30/95	05/18/76	08/24/95	
C-103	NCPLX	SOUND	/PI	198	79	4	0.0	0.0	83	83	119	0	F	S	12/31/98	07/28/87		
C-104	CC	SOUND	IS/IP	295	0	11	0.0	0.0	11	5	295	0	FP	P	09/22/89	07/25/90		
C-105	NCPLX	SOUND	IS/PI	135	46	30	0.0	0.0	32	9	89	0	F	S	06/30/99	08/05/94	08/30/95	
C-106	NCPLX	SOUND	/PI	54	48	0	0.0	0.0	48	42	6	0	F	PS	10/31/99	08/05/94	08/08/94	(g)
C-107	DC	SOUND	IS/IP	257	0	24	0.0	40.8	24	15	257	0	F	S	06/30/99	00/00/00		
C-108	NCPLX	SOUND	IS/IP	66	0	0	0.0	0.0	0	0	66	0	M	S	02/24/84	12/05/74	11/17/94	
C-109	NCPLX	SOUND	IS/IP	66	4	0	0.0	0.0	4	0	62	0	M	PS	11/29/83	01/30/76		
C-110	DC	ASMD LKR	IS/IP	178	1	28	0.0	15.5	29	15	177	0	F	FMP	06/14/95	08/12/86	05/23/95	
C-111	NCPLX	ASMD LKR	IS/IP	57	0	0	0.0	0.0	0	0	57	0	M	S	04/28/82	02/25/70	02/02/95	
C-112	NCPLX	SOUND	IS/IP	104	0	32	0.0	0.0	32	26	104	0	M	PS	09/18/90	09/18/90		
C-201	NCPLX	ASMD LKR	IS/IP	2	0	0	0.0	0.0	0	0	2	0	P	MP	03/31/82	12/02/86		
C-202	EMPTY	ASMD LKR	IS/IP	1	0	0	0.0	0.0	0	0	1	0	P	M	01/19/79	12/09/86		
C-203	NCPLX	ASMD LKR	IS/IP	5	0	0	0.0	0.0	0	0	5	0	P	MP	04/28/82	12/09/86		
C-204	NCPLX	ASMD LKR	IS/IP	3	0	0	0.0	0.0	0	0	3	0	P	MP	04/28/82	12/09/86		
16 SINGLE-SHELL TANKS			TOTALS:	1825	178	162	0.0	103.0	296	212	1647	0						
S TANK FARM STATUS																		
S-101	NCPLX	SOUND	/PI	427	12	68	0.0	0.0	80	80	211	204	F	PS	12/31/98	03/18/88		
S-102	DSSF	SOUND	/PI	506	0	212	3.8	42.8	212	206	105	401	P	FP	11/30/99	03/18/88		(e)
S-103	DSSF	SOUND	/PI	231	0	105	1.8	22.8	105	93	9	222	M	S	06/30/99	06/01/89		(h)
S-104	NCPLX	ASMD LKR	IS/IP	294	1	28	0.0	0.0	29	23	293	0	M	M	12/20/84	12/12/84		
S-105	NCPLX	SOUND	IS/IP	456	0	35	0.0	114.3	35	13	2	454	MP	S	09/26/88	04/12/89		
S-106	NCPLX	SOUND	/PI	330	0	27	3.0	201.6	27	5	0	330	P	FP	11/30/99	03/17/89	09/12/94	(f)
S-107	NCPLX	SOUND	/PI	376	14	47	0.0	0.0	61	61	293	69	F	PS	06/30/99	03/12/87		
S-108	NCPLX	SOUND	IS/PI	450	0	4	0.0	199.8	4	0	5	445	P	MP	06/30/99	03/12/87	12/03/96	
S-109	NCPLX	SOUND	/PI	507	0	83	0.0	111.0	83	83	13	494	F	PS	09/30/75	12/31/98		
S-110	NCPLX	SOUND	IS/PI	390	0	30	0.0	203.1	30	23	131	259	F	PS	05/14/92	03/12/87	12/11/96	
S-111	NCPLX	SOUND	/PI	472	111	64	0.0	3.3	175	175	117	244	P	FP	09/30/99	08/10/89		
S-112	NCPLX	SOUND	/PI	523	0	70	0.0	125.1	70	70	6	517	P	FP	12/31/98	03/24/87		
12 SINGLE-SHELL TANKS			TOTALS:	4962	138	773	8.6	1023.8	911	832	1185	3639						

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		VOLUME DETERMINATION					
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
SX TANK FARM STATUS																		
SX-101	DC	SOUND	/PI	448	0	99	0.0	0.0	99	99	0	448	P	FP	06/30/99	03/10/89		
SX-102	DSSF	SOUND	/PI	514	134	82	0.0	0.0	216	216	0	380	P	M	09/30/99	01/07/88		
SX-103	NCPLX	SOUND	/PI	634	0	132	0.0	0.0	132	132	115	519	F	S	06/30/99	12/17/87		
SX-104	DSSF	ASMD LKR	/PI	467	0	55	0.0	231.3	55	44	136	331	F	S	07/31/99	09/08/88	02/04/98	(a)
SX-105	DSSF	SOUND	/PI	637	0	141	0.0	0.0	141	141	65	572	P	F	06/30/99	06/15/88		
SX-106	NCPLX	SOUND	/PI	371	0	37	3.6	147.3	40	30	0	371	F	PS	11/30/99	06/01/89		(b)
SX-107	NCPLX	ASMD LKR	IS/IP	104	0	5	0.0	0.0	5	0	104	0	P	M	04/28/82	03/06/87		
SX-108	NCPLX	ASMD LKR	IS/IP	87	0	5	0.0	0.0	5	0	87	0	P	M	12/31/93	03/06/87		
SX-109	NCPLX	ASMD LKR	IS/IP	250	0	48	0.0	0.0	48	25	75	175	P	M	06/30/99	05/21/86		
SX-110	NCPLX	ASMD LKR	IS/IP	62	0	0	0.0	0.0	0	0	62	0	M	PS	10/06/76	02/20/87		
SX-111	NCPLX	ASMD LKR	IS/IP	122	0	7	0.0	0.0	7	0	122	0	M	PS	06/30/99	06/09/94		
SX-112	NCPLX	ASMD LKR	IS/IP	108	0	3	0.0	0.0	3	0	108	0	P	M	06/30/99	03/10/87		
SX-113	NCPLX	ASMD LKR	IS/IP	31	0	0	0.0	0.0	0	0	31	0	P	M	06/30/99	03/18/88		
SX-114	NCPLX	ASMD LKR	IS/IP	181	0	14	0.0	0.0	14	0	147	34	P	M	04/28/82	02/26/87		
SX-115	NCPLX	ASMD LKR	IS/IP	12	0	0	0.0	0.0	0	0	12	0	P	M	04/28/82	03/31/88		
15 SINGLE-SHELL TANKS			TOTALS:	4028	134	628	3.6	378.6	765	687	1064	2830						
T TANK FARM STATUS																		
T-101	NCPLX	ASMD LKR	IS/PI	102	1	16	0.0	25.3	17	0	37	64	F	S	06/30/99	04/07/93		
T-102	NCPLX	SOUND	IS/IP	32	13	0	0.0	0.0	13	13	19	0	P	FP	08/31/84	06/28/89		
T-103	NCPLX	ASMD LKR	IS/IP	27	4	0	0.0	0.0	4	0	23	0	F	FP	11/29/83	07/03/84		
T-104	NCPLX	SOUND	IS /PI	317	0	31	0.0	149.5	31	27	317	0	P	MP	11/30/99	06/29/89	10/07/99	(c)
T-105	NCPLX	SOUND	IS/IP	98	0	23	0.0	0.0	23	17	98	0	P	F	05/29/87	05/14/87		
T-106	NCPLX	ASMD LKR	IS/IP	21	2	0	0.0	0.0	2	0	19	0	P	FP	04/28/82	06/29/89		
T-107	NCPLX	ASMD LKR	IS/PI	173	0	22	0.0	11.0	22	12	173	0	P	FP	05/31/96	07/12/84	05/09/96	
T-108	NCPLX	ASMD LKR	IS/IP	44	0	0	0.0	0.0	0	0	21	23	P	M	06/30/99	07/17/84		

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME		VOLUME DETERMINATION					
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
T-109	NCPLX	ASMD LKR	IS/IP	58	0	0	0.0	0.0	0	0	0	58	M	M	06/30/99	02/25/93		
T-110	NCPLX	SOUND	/PI	347	0	31	0.0	50.3	31	25	347	0	P	FP	07/31/99	07/12/84	10/07/99	(d)
T-111	NCPLX	ASMD LKR	IS/PI	446	0	34	0.0	9.6	34	29	446	0	P	FP	04/18/94	04/13/94	02/13/95	
T-112	NCPLX	SOUND	IS/IP	67	7	0	0.0	0.0	7	7	60	0	P	FP	04/28/82	08/01/84		
T-201	NCPLX	SOUND	IS/IP	29	1	3	0.0	0.0	4	0	28	0	M	PS	05/31/78	04/15/86		
T-202	NCPLX	SOUND	IS/IP	21	0	2	0.0	0.0	2	0	21	0	FP	P	07/12/81	07/06/89		
T-203	NCPLX	SOUND	IS/IP	35	0	4	0.0	0.0	4	0	35	0	M	PS	01/31/78	08/03/89		
T-204	NCPLX	SOUND	IS/IP	38	0	4	0.0	0.0	4	0	38	0	FP	P	07/22/81	08/03/89		
16 SINGLE-SHELL TANKS			TOTALS:	1855	28	170	0.0	245.7	198	130	1682	145						
TX TANK FARM STATUS																		
TX-101	NCPLX	SOUND	IS/IP/CCS	87	3	2	0.0	0.0	5	0	74	10	F	P	06/30/99	10/24/85		
TX-102	NCPLX	SOUND	IS/IP/CCS	217	0	22	0.0	94.4	22	0	0	217	M	S	08/31/84	10/31/85		
TX-103	NCPLX	SOUND	IS/IP/CCS	157	0	15	0.0	68.3	15	0	0	157	F	S	06/30/99	10/31/85		
TX-104	NCPLX	SOUND	IS/IP/CCS	65	5	14	0.0	3.6	15	0	23	37	F	FP	06/30/99	10/16/84		
TX-105	NCPLX	ASMD LKR	IS/IP/CCS	609	0	20	0.0	121.5	20	0	0	609	M	PS	08/22/77	10/24/89		
TX-106	NCPLX	SOUND	IS/IP/CCS	341	0	10	0.0	134.6	10	0	0	341	M	S	06/30/99	10/31/85		
TX-107	NCPLX	ASMD LKR	IS/IP/CCS	36	1	1	0.0	0.0	2	0	8	27	FP	FP	06/30/99	10/31/85		
TX-108	NCPLX	SOUND	IS/IP/CCS	134	0	0	0.0	13.7	0	0	6	128	P	FP	06/30/99	09/12/89		
TX-109	NCPLX	SOUND	IS/IP/CCS	384	0	10	0.0	72.3	10	0	384	0	F	PS	06/30/99	10/24/89		
TX-110	NCPLX	ASMD LKR	IS/IP/CCS	462	0	15	0.0	115.1	15	0	37	425	M	PS	06/30/99	10/24/89		
TX-111	NCPLX	SOUND	IS/IP/CCS	370	0	9	0.0	98.4	9	0	43	327	M	PS	06/30/99	09/12/89		
TX-112	NCPLX	SOUND	IS/IP/CCS	649	0	24	0.0	94.0	24	0	0	649	P	PS	05/30/83	11/19/87		
TX-113	NCPLX	ASMD LKR	IS/IP/CCS	607	0	16	0.0	19.2	16	0	183	424	M	PS	06/30/99	04/11/83	09/23/94	
TX-114	NCPLX	ASMD LKR	IS/IP/CCS	535	0	15	0.0	104.3	15	0	4	531	M	PS	06/30/99	04/11/83	02/17/95	
TX-115	NCPLX	ASMD LKR	IS/IP/CCS	568	0	19	0.0	99.1	19	0	0	568	M	S	06/30/99	06/15/88		
TX-116	NCPLX	ASMD LKR	IS/IP/CCS	631	0	23	0.0	23.8	23	0	68	563	M	PS	06/30/99	10/17/89		
TX-117	NCPLX	ASMD LKR	IS/IP/CCS	626	0	8	0.0	54.3	8	0	29	597	M	PS	06/30/99	04/11/83		
TX-118	NCPLX	SOUND	IS/IP/CCS	300	0	27	0.0	89.1	27	0	34	266	F	S	06/30/99	12/19/79		
18 SINGLE-SHELL TANKS			TOTALS:	6778	9	250	0.0	1205.7	255	0	893	5876						

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUM		VOLUME DETERMINATION			PHOTOS/VIDEOS		
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
TY TANK FARM STATUS																		
TY-101	NCPLX	ASMD LKR	IS/IP/CCS	118	0	0	0.0	8.2	0	0	72	46	P	F	06/30/99	08/22/89		
TY-102	NCPLX	SOUND	IS/IP/CCS	64	0	14	0.0	6.6	14	0	0	64	P	FP	06/28/82	07/07/87		
TY-103	NCPLX	ASMD LKR	IS/IP/CCS	162	0	5	0.0	11.5	5	0	162	0	P	FP	07/09/82	08/22/89		
TY-104	NCPLX	ASMD LKR	IS/IP/CCS	46	3	12	0.0	0.0	15	0	43	0	P	FP	06/27/90	11/03/87		
TY-105	NCPLX	ASMD LKR	IS/IP/CCS	231	0	0	0.0	3.6	0	0	231	0	P	M	04/28/82	09/07/89		
TY-106	NCPLX	ASMD LKR	IS/IP/CCS	21	0	0	0.0	0.0	0	0	21	0	P	M	06/30/99	08/22/89		
6 SINGLE-SHELL TANKS			TOTALS:	642	3	31	0.0	29.9	34	0	529	110						
U TANK FARM STATUS																		
U-101	NCPLX	ASMD LKR	IS/IP	25	3	0	0.0	0.0	3	0	22	0	P	MP	04/28/82	06/19/79		
U-102	NCPLX	SOUND	/PI	375	18	75	0.0	0.0	93	93	43	314	P	MP	12/31/98	06/08/89		
U-103	NCPLX	SOUND	/PI	440	0	177	1.4	52.3	177	166	12	428	P	FP	10/31/99	09/13/88		(1)
U-104	NCPLX	ASMD LKR	IS/IP	122	0	7	0.0	0.0	7	0	79	43	P	MP	06/30/99	08/10/89		
U-105	NCPLX	SOUND	/PI	418	37	83	0.0	0.0	120	120	32	349	FM	PS	12/31/98	07/07/88		
U-106	NCPLX	SOUND	/PI	226	15	41	0.0	0.0	56	56	0	211	F	PS	12/31/98	07/07/88		
U-107	DSSF	SOUND	/PI	408	33	82	0.0	0.0	115	115	15	360	F	S	12/31/98	10/27/88		
U-108	NCPLX	SOUND	/PI	468	24	100	0.0	0.0	124	124	29	415	F	S	12/31/98	09/12/84		
U-109	NCPLX	SOUND	/PI	465	19	99	0.0	0.0	118	118	35	411	F	F	05/31/99	07/07/88		
U-110	NCPLX	ASMD LKR	IS/PI	186	0	25	0.0	0.0	25	19	186	0	M	M	12/30/84	12/11/84		
U-111	DSSF	SOUND	/PI	329	0	71	0.0	0.0	71	71	26	303	PS	FPS	12/31/98	06/23/88		
U-112	NCPLX	ASMD LKR	IS/IP	49	4	0	0.0	0.0	4	0	45	0	P	MP	02/10/84	08/03/89		
U-201	NCPLX	SOUND	IS/IP	5	1	0	0.0	0.0	1	0	4	0	M	S	08/15/79	08/08/89		
U-202	NCPLX	SOUND	IS/IP	5	1	0	0.0	0.0	1	0	4	0	M	S	08/15/79	08/08/89		
U-203	NCPLX	SOUND	IS/IP	3	1	0	0.0	0.0	1	0	2	0	M	S	08/15/79	06/13/89		
U-204	NCPLX	SOUND	IS/IP	3	1	0	0.0	0.0	1	0	2	0	M	S	08/15/79	06/13/89		
16 SINGLE-SHELL TANKS			TOTALS:	3527	157	760	1.4	52.3	917	882	536	2834						
GRAND TOTAL				33750	1589	3677	13.6	4970.5	5225	4247	11496	20665						

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

Total Waste is calculated as the sum of Sludge and Saltcake plus Supernate.

The category "Interim Isolated" (II) was changed to "Intrusion Prevention" (IP) in June 1993. See section C. "Tank and Equipment Code and Status Definitions."

Stabilization information from WHC-SD-RE-TI-178 SST STABILIZATION RECORD, latest revision, or SST Stabilization or Cognizant Engineer

(a) SX-104 Following information from Cognizant Engineer

Being pumped directly to SY-102. Pumping was interrupted on July 27, 1999, by a leaking saltwell pump. This tank is being evaluated for interim stabilization based on equipment failure. Volumes reported are based on Best-Basis Inventory Control values and will be udated annually as pumping data accumulates.

Total Waste: 466.7 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 55.3 Kgal
Pumped this month: 0.0 Kgal
Total Pumped: 231.3 Kgal
Drainable Liquid Remaining: 55.3 Kgal
Pumpable Liquid Remaining: 44.3 Kgal
Sludge: 136.0 Kgal
Saltcake: 330.7 Kgal

The values for total waste and saltcake waste have been adjusted to reflect the removal of interstitial fluid thus far. Assuming the waste is still saltcake and with an LOW level of 75 inches, the apparent lower porosity lowers the estimate of DIL, DLR, and PLR.

(b) SX-106 Following information from Cognizant Engineer

Being pumped directly to SY-102.
Volumes reported are based on Best-Basis Inventory Control values and will be updated annually as pumping data accumulates.

Total Waste: 371.2 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 36.6 Kgal
Pumped this month: 3.6 Kgal
Total Pumped: 147.3 Kgal
Drainable Liquid Remaining: 39.6 Kgal
Pumpable Liquid Remaining: 30.1 Kgal
Sludge: 0.0 Kgal
Saltcake: 371.2 Kgal

In November 1999, a total of 5,058 gal of fluid was removed from the tank, and a total of 1,422 gal of water was added for pump priming and equipment flushes for a net removal of 3,636 gal of waste.

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(c) T-104 Following information from Cognizant Engineer

This tank was Interim Stabilized on November 19, 1999.

Total Waste: 316.8 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 31.2 Kgal
Pumped this month: 0.0 Kgal
Total Pumped: 149.5 Kgal
Drainable Liquid Remaining: 31.2 Kgal
Pumpable Liquid Remaining: 26.9 Kgal
Sludge: 316.8 Kgal
Saltcake: 0.0 Kgal

In-tank video taken October 7, 1999, shows the surface is clearly sludge-type waste with no saltcake present. No visible water on surface. Waste surface appears level across tank with numerous cracks (approx. 2 inches wide and 4 inches deep). There is a minimal (approximately 2 foot diameter) collapsed area around saltwell screen, with no visible bottom.

(d) T-110 Following information from Cognizant Engineer

Pumping began May 21, 1997.
Volumes reported are based on Best-Basis Inventory Control values and will be updated annually as pumping data accumulates.

Total Waste: 347 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 31.0 Kgal
Pumped this month: 0.0 Kgal
Total Pumped: 50.3 Kgal
Drainable Liquid Remaining: 31.0 Kgal
Pumpable Liquid Remaining: 25.0 Kgal
Sludge: 347.0 Kgal
Saltcake: 0.0 Kgal

This tank is currently undergoing stabilization evaluation and pumping operations are not expected to resume. The in-tank video was taken October 7, 1999.

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(e) S-102 Following information from Cognizant Engineer

Pumping commenced March 18, 1999. The waste is pumped directly to SY-102. Pumping stopped on November 17, 1999, when problems with the pump developed. Higher priority work will delay the pump replacement.

Total Waste: 506.2 K gal
Supernate: 0.0 Kgal
Drainable Interstitial: 212.0 Kgal
Pumped this month: 3.8 Kgal
Total Pumped: 42.8 Kgal
Drainable Liquid Remaining: 212.0 Kgal
Pumpable Liquid Remaining: 206.0 Kgal
Sludge: 105.0 Kgal
Saltcake: 401.2 Kgal

In November 1999 a total of 4,371 gal of fluid was removed from the tank and a total of 549 gal of water was added by pump priming and equipment flushes, for a net removal of 3,822 gal of tank waste.

(f) S-106 Following information from Cognizant Engineer

Pumping commenced on April 15, 1999. The waste is pumped directly to SY-102.

Total Waste: 329.9 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 26.9 Kgal
Pumped this Month: 3.0 Kgal
Total Pumped: 201.6 Kgal
Drainable Liquid Remaining: 26.9 Kgal
Pumpable Liquid Remaing: 7.9 Kgal
Sludge: 0.0 Kgal
Saltcake: 329.9 Kgal

In November 1999 a total of 3,720 gal of fluid was removed from the tank and a total of 765 gal of water was added by pump priming and equipment flushes, for a net removal of 2,955 gal of tank waste. In addition, 536 gal of water were used for transfer line flushes.

The total waste volume has been revised to reflect the removal of 96,100 gal of interstitial fluid from the saltcake.

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(g) C-106 Following information from WRSS Design Authority

Sluicing in this tank commenced November 18, 1998. Final volumes after sluicing completed:

Total Waste: 54.0 Kgal
Supernate: 48.0 Kgal
Drainable Interstitial Liquid: 0.0 Kgal
Drainable Liquid Remaining: 48.0 Kgal
Pumpable Liquid Remaining: 42.0 Kgal
Sludge: 6.0 Kgal
Saltcake: 0.0 Kgal

Although sluicing was considered complete in September 1999 (and DOE-RQ was requested to remove this tank from the high heat load list), in October, 0.14 inches of sludge were removed, with a cumulative total of 67.75 inches removed since sluicing began in November 1998.
Final volumes per HNF-5267, "Waste Retrieval Sluicing System Campaign Number 3 Solids Volume Transferred Calculation," Rev 2, dated November 17, 1999

(h) S-103 Following information from Cognizant Engineer

Pumping commenced on June 4, 1999. Waste is pumped directly to SY-102.

Total Waste: 231 Kgal
Supernate: 0.0 Kgal (no good estimate, but supernate still being pumped)
Drainable Interstitial: 105.0 Kgal
Pumped this Month: 1.8 Kgal
Total Pumped: 22.8 Kgal
Drainable Liquid Remaing: 105.0 Kgal
Pumpable Liquid Remaing: 93.0 Kgal
Sludge: 9.0 Kgal
Saltcake: 222.0 Kgal

In November 1999 a total of 2,376 gal of fluid was removed, and a total of 607 gal of water was added by pump priming and equipment flushes, for a net removal of 1,769 gal of tank waste. Transfer line flushes used 825 gal of water.

TABLE E-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 1999

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(l) U-103 Following information from Cognizant Engineer.

Saltwell pumping commenced September 26, 1999. The waste is pumped directly to SY-102.

Total Waste: 440.0 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 176.7 Kgal
Pumped this month: 1.4 Kgal
Total Pumped: 52.3 Kgal
Drainable Liquid Remaining: 176.7 Kgal
Pumpable Liquid Remaining: 165.7 Kgal
Sludge: 12.0 Kgal
Saltcake: 428.0 Kgal

In November 1999, a total of 1,482 gal of fluid was removed and 67 gal of water added for priming/flushes. In addition, 677 gal of water were used as dilution. The saltwell pump was shut down on November 2, 1999, due to transfer line plugging. Clearing operations during November added 2,490 gal of water back into the tank after the shutdown. The water volume will be removed from the total pumped after the pumping operations resume.

APPENDIX F

PERFORMANCE SUMMARY

TABLE F-1. SUMMARY OF WASTE TRANSACTIONS IN THE DOUBLE-SHELL TANKS

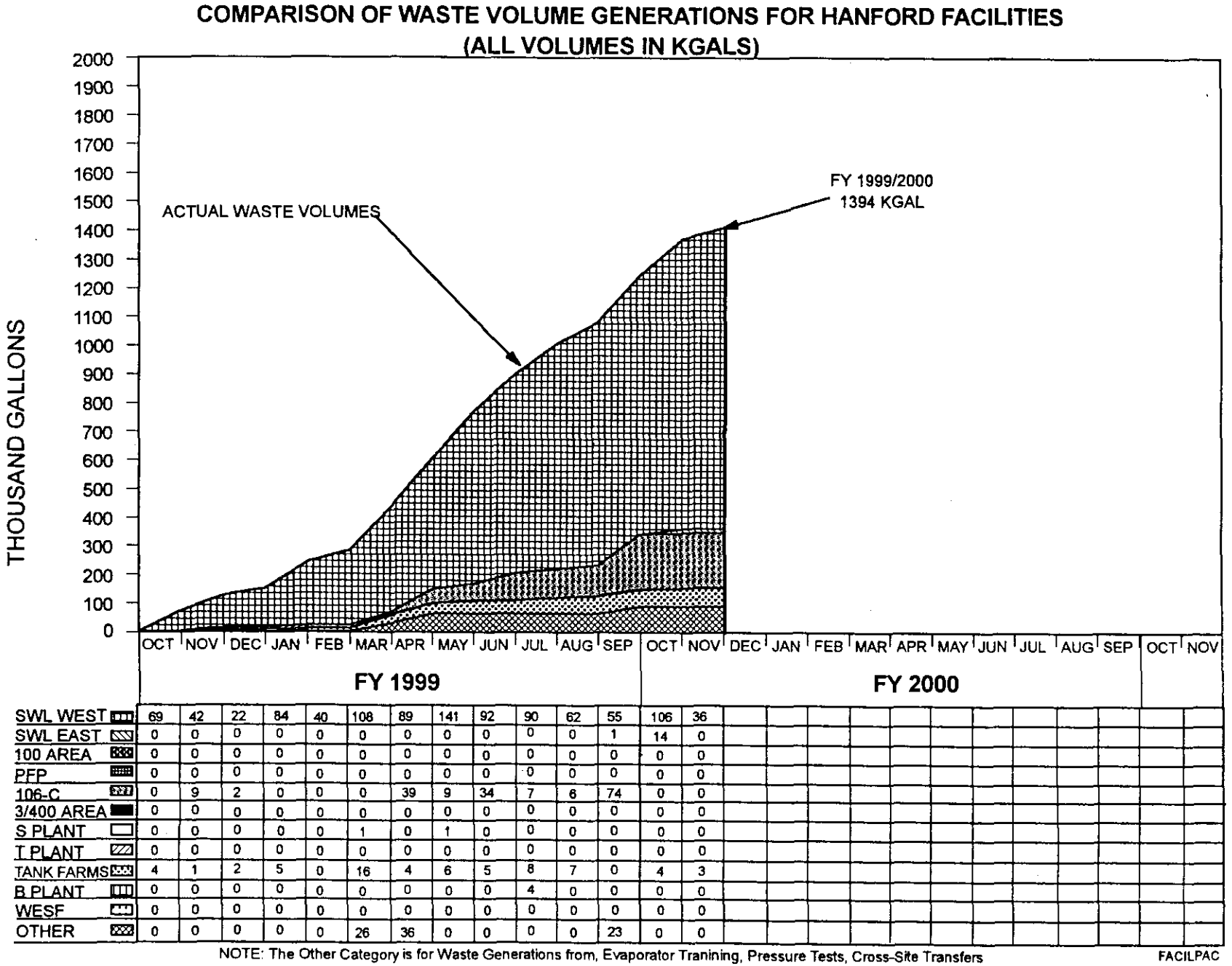
SUMMARY OF WASTE TRANSACTIONS IN THE DOUBLE-SHELL TANK (DST) SYSTEM FOR NOVEMBER 1999:
ALL VOLUMES IN KGALS

- The DST system received waste transfers/additions from SST Stabilization (West Area SWL) and Tank Farms in November.
- There was a net change of +34,000 gallons in the DST system for November 1999.
- The total DST inventory as of November 30, 1999 was 19,132 Kgals.
- There was no Saltwell Liquid (SWL) pumped to the East Area DSTs in November.
- There was ~36 Kgals of Saltwell Liquid (SWL) pumped to the West Area DSTs (102-SY) in November.
- The SWL numbers are preliminary and are subject to change once cognizant Engineers do a validation, the volumes reported contain actual waste volume plus any water added for dilution and transfer line flushes.
- The solids volumes transferred from Tank 106-C to Tank 102-AY were revised last month, the official volume of transferred solids is 186,313 gallons (LMHC-9958557 HNF-5267, Rev. 2).

NOVEMBER 1999 DST WASTE RECEIPTS					
FACILITY GENERATIONS		OTHER GAINS ASSOCIATED WITH		OTHER LOSSES ASSOCIATED WITH	
SWL (West)	+36 Kgal (2SY)	SLURRY	+1 Kgal	SLURRY	-8 Kgal
Tank Farms	+3 Kgal (2AZ,2AW & 4AN)	CONDENSATE	+6 Kgal	CONDENSATE	-3 Kgal
TOTAL	+39 Kgal	INSTRUMENTATION	+0 Kgal	INSTRUMENTATION	-0 Kgal
		UNKNOWN	+2 Kgal	UNKNOWN	-3 Kgal
		TOTAL	+9 Kgal	TOTAL	-14 Kgal

	ACTUAL DST WASTE RECEIPTS	PROJECTED DST WASTE RECEIPTS	MISC. DST CHANGES (+/-)	WVR	NET DST CHANGE	TOTAL DST VOLUME
OCT99	124	127	-19	0	105	19098
NOV99	39	209	-5	0	34	19132
DEC99		156		0		
JAN00		361		0		
FEB00		137		0		
MAR00		95		0		
APR00		124		-600		
MAY00		135		0		
JUN00		139		0		
JUL00		225		0		
AUG00		201		0		
SEP00		186		0		

NOTE: The "PROJECTED DST WASTE RECEIPTS" and "WVR" numbers were updated in October 1999, as supplied by cognizant engineers.



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
SWL WEST	69	42	22	84	40	108	89	141	92	90	62	55	106	36
SWL EAST	0	0	0	0	0	0	0	0	0	0	0	1	14	0
100 AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106-C	0	9	2	0	0	0	39	9	34	7	6	74	0	0
3/400 AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S PLANT	0	0	0	0	0	1	0	1	0	0	0	0	0	0
T PLANT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TANK FARMS	4	1	2	5	0	16	4	6	5	8	7	0	4	3
B PLANT	0	0	0	0	0	0	0	0	0	4	0	0	0	0
WESF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	26	36	0	0	0	0	23	0	0

NOTE: The Other Category is for Waste Generations from, Evaporator Tranining, Pressure Tests, Cross-Site Transfers

FACILPAC

FIGURE F-1. COMPARISON OF WASTE VOLUME GENERATIONS FOR HANFORD FACILITIES
(All volumes in Kgals)

APPENDIX G

MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

TABLE G-1. EAST AND WEST AREA MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

ACTIVE - still running transfers through the associated diversion boxes or pipeline encasements

November 30, 1999

FACILITY	LOCATION	PURPOSE (receives waste from:)	(Gallons)	MONITORED BY	REMARKS
EAST AREA					
241-A-302-A	A Farm	A-151 DB	947	SACS/ENRAF/Manually	Foamed over Catch Tank pump pit & div. box to prevent intrusion
241-ER-311	B Plant	ER-151, ER-152 DB	7381	SACS/FIC/Manually	Zip cord reading taken 11/11/99
241-AX-152	AX Farm	AX-152 DB	0	SACS/MT	Pumped 11/98
241-AZ-151	AZ Farm	AZ-702 condensate	2708	SACS/FIC/Manually	Volume changes daily - pumped to AZ-102 as needed
241-AZ-154	AZ Farm		25	SACS/MT	
244-BX-TK/SMP	BX Complex	DCRT - Receives from several farms	14188	SACS/MT	Using Manual Tape for tank/sump, pumped 10/16/99 to 66.0 inches.
244-A-TK/SMP	A Complex	DCRT - Receives from several farms	3144	MCS/SACS/WTF	WTF- pumped 3/99 to AP-108
A-350	A Farm	Collects drainage	306	MCS/SACS/WTF	WTF (uncorrected) pumped as needed
AR-204	AY Farm	Tanker trucks from various facilities	475	DIP TUBE	Alarms on SACS-pumped to AP-108, 7/99
A-417	A Farm		11757	SACS/WTF	WTF (uncorrected) pumped 4/98
CR-003-TK/SUMP	C Farm	DCRT	3484	MT/ZIP CORD	Zip cord in sump O/S 3/11/96, water intrusion, 1/98
WEST AREA					
241-TX-302-C	TX Farm	TX-154 DB	166	SACS/ENRAF/Manually	
241-U-301-B	U Farm	U-151, U-152, U-153, U-252 DB	8091	SACS/ENRAF/Manually	Returned to service 12/30/93
241-UX-302-A	U Plant	UX-154 DB	2100	SACS/ENRAF/Manually	
241-S-304	S Farm	S-151 DB	130	SACS/ENRAF/Manually	Replaced S-302-A, 10/91; ENRAF installed 7/98 Sump not alarming.
244-S-TK/SMP	S Farm	DCRT - Receives from several farms	7622	SACS/Manually	WTF (uncorrected)
244-TX-TK/SMP	TX Farm	DCRT - Receives from several farms	15706	SACS/Manually	MT
Vent Station Catch Tank		Cross Country Transfer Line	349	SACS/Manually	MT

Total Active Facilities 18

LEGEND:
- **DB - Diversion Box**
- **DCRT - Double-Contained Receiver Tank**
- **TK - Tank**
- **SMP - Sump**
- **FIC - Food Instrument Corporation measurement device**
- **MT - Manual Tape**
- **Zip Cord - surface level measurement device**
- **WTF - Weight Time Factor - can be recorded as WTF, CWF (corrected), and Uncorrected WTF**
- **SACS - Surveillance Automated Control System**
- **MCS - Monitor and Control System**
- **Manually - Not connected to any automated system**
- **O/S - Out of Service**
- **ENRAF - Surface Level Measuring Device**

TABLE G-2. EAST AREA INACTIVE MISC. UNDERGROUND STORAGE TANKS AND SPECIAL SURV. FACILITIES

INACTIVE - no longer receiving waste transfers

November 30, 1999

FACILITY	LOCATION	RECEIVED WASTE FROM:	(Gallons)	MONITORED BY	REMARKS
216-BY-201	BY Farm	TBP Waste Line	Unknown	NM	(216-BY)
241-A-302-B	A Farm	A-152 DB	5720	SACS/MT	Isolated 1985, Project B-138 Interim Stabilized 1990, Rain intrusion
241-AX-151	N of PUREX	PUREX	Unknown	NM	Isolated 1985
241-B-301-B	B Farm	B-151, B-152, B-153, B-252 DB	22250	NM	Isolated 1985 (1)
241-B-302-B	B Farm	B-154 DB	4930	NM	Isolated 1985 (1)
241-BX-302-A	BX Farm	BR-152, BX-153, BXR-152, BYR-152 DB	840	NM	Isolated 1985 (1)
241-BX-302-B	BX Farm	BX-154 DB	1040	NM	Isolated 1985 (1)
241-BX-302-C	BX Farm	BX-155 DB	870	NM	Isolated 1985 (1)
241-C-301-C	C Farm	C-151, C-152, C-153, C-252 DB	10470	NM	Isolated 1985 (1)
241-CX-70	Hot Semi-	Transfer lines	Unknown	NM	Isolated, Decommission Project,
241-CX-72	Works	Transfer lines	650	NM	See Dwg H-2-95-501, 2/5/87
241-ER-311A	SW B Plant	ER-151 DB	Unknown	NM	Isolated
244-AR VAULT	A Complex	Between farms & B-Plant	Unknown	NM	Not actively being used. Systems activated for final clean-out.
244-BXR-TK/SMP-001	BX Farm	Transfer lines	7200	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-002	BX Farm	Transfer lines	2180	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-003	BX Farm	Transfer lines	1810	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-011	BX Farm	Transfer lines	7100	NM	Interim Stabilization 1985 (1)
361-B-TANK	B Plant	Drainage from B-Plant	Unknown	NM	Interim Stabilization 1985 (1)

Total East Area inactive facilities 18

LEGEND:
- **DB - Diversion Box**
- **DCRT - Double-Contained Receiver Tank**
- **MT - Manual Tape**
- **SACS - Surveillance Automated Control System**
- **TK - Tank**
- **SMP - Sump**
- **R - Usually denotes replacement**
- **NM - Not Monitored**

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

TABLE G-3. WEST AREA INACTIVE MISC. UNDERGROUND STORAGE TANKS AND SPECIAL SURV. FACILITIES

INACTIVE - no longer receiving waste transfers

November 30, 1999

FACILITY	LOCATION	RECEIVED WASTE FROM:	(Gallons)	MONITORED BY	REMARKS
216-TY-201	E. of TY Farm	Supernate from T-112	Unknown	NM	Isolated
231-W-151-001	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
231-W-151-002	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
240-S-302	S Farm	240-S-151 DB	8468	SACS/ENRAF	Assumed Leaker EPDA 85-04
241-S-302-A	S Farm	241-S-151 DB	0		Assumed Leaker TF-EFS-90-042
	Partially filled with grout 2/91, determined still assumed leaker after leak test. Manual FIC readings are unobtainable due to dry grouted surface.				
	CASS monitoring system retired 2/23/99; intrusion readings discontinued. S-304 replaced S-302-A				
241-S-302-B	S Farm	S Encasements	Unknown	NM	Isolated 1985 (1)
241-SX-302	SX Farm	SX-151 DB, 151 TB	Unknown	NM	Isolated 1987
241-SX-304	SX Farm	SX-152 Transfer Box, SX-151 DB	Unknown	NM	Isolated 1985 (1)
241-T-301	T Farm	DB T-151, -151, -153, -252	Unknown	NM	Isolated 1985 (241-T-301B)
241-TX-302	TX Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TX-302-X-B	TX Farm	TX Encasements	Unknown	NM	Isolated 1985 (1)
241-TX-302-B	TX Farm	TX-155 DB	1600	SACS/MT	New MT installed 7/16/93
241-TX-302-B(R)	E. of TX Farm	TX-155 DB	Unknown	NM	Isolated
241-TY-302-A	TY Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TY-302-B	TY Farm	TY Encasements	Unknown	NM	Isolated 1985 (1)
241-Z-8	E. of Z Plant	Recuplex waste	Unknown	NM	Isolated, 1974, 1975
242-T-135	T Evaporator	T Evaporator	Unknown	NM	Isolated
242-TA-R1	T Evaporator	Z Plant waste	Unknown	NM	Isolated
243-S-TK-1	N. of S Farm	Pers. Decon. Facility	Unknown	NM	Isolated
244-U-TK/SMP	U Farm	DCRT - Receives from several farms	Unknown	NM	Not yet in use
244-TXR VAULT	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-001	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-002	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-003	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
270-W	SE of U Plant	Condensate from U-221	Unknown	NM	Isolated 1970
361-T-TANK	T Plant	Drainage from T-Plant	Unknown	NM	Isolated 1985 (1)
361-U-TANK	U Plant	Drainage from U-Plant	Unknown	NM	Interim Stabilzed, MT removed 1984 (1)

Total West Area inactive facilities 27

LEGEND:
- **DB - Diversion Box, TB - Transfer Box**
- **DCRT - Double-Contained Receiver Tank**
- **TK - Tank**
- **SMP - Sump**
- **R - Usually denotes replacement**
- **FIC - Surface Level Monitoring Device**
- **MT - Manual Tape**
- **O/S - Out of Service**
- **SACS - Surveillance Automated Control System**
- **NM - Not Monitored**
- **ENRAF - Surface Level Monitoring Device**

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

APPENDIX H

LEAK VOLUME ESTIMATES

TABLE H-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (Sheet 1 of 5)

November 30, 1999

Tank Number	Date Declared Confirmed or Assumed Leaker (3)	Volume Gallons (2)	Associated KiloCuries 137 cs (10)	Interim Stabilized Date (11)	Leak Estimate Updated	Leak Estimate Reference
241-A-103	1987	5500 (8)		06/88	1987	(j)
241-A-104	1975	500 to 2500	0.8 to 1.8 (q)	09/78	1983	(a)(q)
241-A-105 (1)	1963	10000 to 277000	85 to 760 (b)	07/79	1991	(b)(c)
241-AX-102	1988	3000 (8)		09/88	1989	(h)
241-AX-104	1977	-- (6)		08/81	1989	(g)
241-B-101	1974	-- (6)		03/81	1989	(g)
241-B-103	1978	-- (6)		02/85	1989	(g)
241-B-105	1978	-- (6)		12/84	1989	(g)
241-B-107	1980	8000 (8)		03/85	1986	(d)(f)
241-B-110	1981	10000 (8)		03/85	1986	(d)
241-B-111	1978	-- (6)		06/85	1989	(g)
241-B-112	1978	2000		05/85	1989	(g)
241-B-201	1980	1200 (8)		08/81	1984	(e)(f)
241-B-203	1983	300 (8)		06/84	1986	(d)
241-B-204	1984	400 (8)		06/84	1989	(g)
241-BX-101	1972	-- (6)		09/78	1989	(g)
241-BX-102	1971	70000	50 (l)	11/78	1986	(d)
241-BX-108	1974	2500	0.5 (l)	07/79	1986	(d)
241-BX-110	1976	-- (6)		08/85	1989	(g)
241-BX-111	1984 (13)	-- (6)		03/95	1993	(g)
241-BY-103	1973	<5000		11/97	1983	(a)
241-BY-105	1984	-- (6)		N/A	1989	(g)
241-BY-106	1984	-- (6)		N/A	1989	(g)
241-BY-107	1984	15100 (8)		07/79	1989	(g)
241-BY-108	1972	<5000		02/85	1983	(a)
241-C-101	1980	20000 (8)(10)		11/83	1986	(d)
241-C-110	1984	2000		05/95	1989	(g)
241-C-111	1968	5500 (8)		03/84	1989	(g)
241-C-201 (4)	1988	550		03/82	1987	(i)
241-C-202 (4)	1988	450		08/81	1987	(i)
241-C-203	1984	400 (8)		03/82	1986	(d)
241-C-204 (4)	1988	350		09/82	1987	(i)
241-S-104	1968	24000 (8)		12/84	1989	(g)
241-SX-104	1988	6000 (8)		N/A	1988	(k)
241-SX-107	1964	<5000		10/79	1983	(a)
241-SX-108 (5)(14)	1962	2400 to 35000	17 to 140 (m)(q)(t)	08/79	1991	(m)(q)(t)
241-SX-109 (5)(14)	1965	<10000	<40 (n)(t)	05/81	1992	(n)(t)
241-SX-110	1976	5500 (8)		08/79	1989	(g)
241-SX-111 (14)	1974	500 to 2000	0.6 to 2.4 (l)(q)(t)	07/79	1986	(d)(q)(t)
241-SX-112 (14)	1969	30000	40 (l)(t)	07/79	1986	(d)(t)
241-SX-113	1962	15000	8 (l)	11/78	1986	(d)
241-SX-114	1972	-- (6)		07/79	1989	(g)
241-SX-115	1965	50000	21 (o)	09/78	1992	(o)
241-T-101	1992	7500 (8)		04/93	1992	(p)
241-T-103	1974	<1000 (8)		11/83	1989	(g)
241-T-106	1973	115000 (8)	40 (l)	08/81	1986	(d)
241-T-107	1984	-- (6)		05/96	1989	(g)
241-T-108	1974	<1000 (8)		11/78	1980	(f)
241-T-109	1974	<1000 (8)		12/84	1989	(g)
241-T-111	1979, 1994 (12)	<1000 (8)		02/95	1994	(f)(r)
241-TX-105	1977	-- (6)		04/83	1989	(g)
241-TX-107 (5)	1984	2500		10/79	1986	(d)
241-TX-110	1977	-- (6)		04/83	1989	(g)
241-TX-113	1974	-- (6)		04/83	1989	(g)
241-TX-114	1974	-- (6)		04/83	1989	(g)
241-TX-115	1977	-- (6)		09/83	1989	(g)
241-TX-116	1977	-- (6)		04/83	1989	(g)
241-TX-117	1977	-- (6)		03/83	1989	(g)
241-TY-101	1973	<1000 (8)		04/83	1980	(f)
241-TY-103	1973	3000	0.7 (l)	02/83	1986	(d)
241-TY-104	1981	1400 (8)		11/83	1986	(d)
241-TY-105	1960	35000	4 (l)	02/83	1986	(d)
241-TY-106	1959	20000	2 (l)	11/78	1986	(d)
241-U-101	1959	30000	20 (l)	09/79	1986	(d)
241-U-104	1961	55000	0.09 (l)	10/78	1986	(d)
241-U-110	1975	5000 to 8100 (8)	0.05 (q)	12/84	1986	(d)(q)
241-U-112	1980	8500 (8)		09/79	1986	(d)
67 Tanks		<750,000 - 1,050,000 (7)				

N/A = not applicable (not yet interim stabilized)

TABLE H-1. SINGLE-SHELL LEAK VOLUME ESTIMATES

(Sheet 2 of 5)

Footnotes:

(1) Current estimates [see reference(b)] are that 610 Kgallons of cooling water was added to Tank 241-A-105 from November 1970 to December 1978 to aid in evaporative cooling. In accordance with Dangerous Waste Regulations [Washington Administrative Code 173-303-070 (2)(a)(ii), as amended, Washington State Department of Ecology, 1990, Olympia, Washington], any of this cooling water that has been added and subsequently leaked from the tank must be classified as a waste and should be included in the total leak volume. In August 1991, the leak volume estimate for this tank was updated in accordance with the WAC regulations. Previous estimates excluded the cooling water leaks from the total leak volume estimates because the waste content (concentration) in the cooling water which leaked should be much less than the original liquid waste in the tank (the sludge is relatively insoluble). The total leak volume estimate in this report (10 Kgallons to 277 Kgallons) is based on the following (see References):

1. Reference (b) contains an estimate of 5 Kgallons to 15 Kgallons for the initial leak prior to August 1968.

2. Reference (b) contains an estimate of 5 Kgallons to 30 Kgallons for the leak while the tank was being sluiced from August 1968 to November 1970.

3. Reference (b) contains an estimate of 610 Kgallons of cooling water added to the tank from November 1970 to December 1978 but it was estimated that the leakage was small during this period. This reference contains the statement "Sufficient heat was generated in the tank to evaporate most, and perhaps nearly all, of this water." This results in a low estimate of zero gallons leakage from November 1970 to December 1978.

4. Reference (c) contains an estimate the 378 to 410 Kgallons evaporated out of the tank from November 1970 to December 1978. Subtracting the minimum evaporation estimate from the cooling water added estimate provides a range from 0 to 232 Kgallons of cooling water leakage from November 1970 to December 1978.

	Low Estimate	High Estimate
Prior to August 1968	5,000	15,000
August 1968 to November 1970	5,000	30,000
November 1970 to December 1978	0	232,000
Totals	10,000	277,000

(2) These leak volume estimates do not include (with some exceptions), such things as: (a) cooling/raw water leaks, (b) intrusions (rain infiltration) and subsequent leaks, (c) leaks inside the tank farm but not through the tank liner (surface leaks, pipeline leaks, leaks at the joint for the overflow or fill lines, etc.), and (d) leaks from catch tanks, diversion boxes, encasements, etc.

(3) In many cases, a leak was suspected long before it was identified or confirmed. For example, reference (d) shows that Tank 241-U-104 was suspected of leaking in 1956. The leak was "confirmed" in 1961. This report lists the "assumed leaker" date of 1961. Using present standards, Tank 241-U-104 would have been declared an assumed leaker in 1956. In 1984, the criteria designations of "suspected leaker," "questionable integrity," "confirmed leaker," "declared leaker," "borderline" and "dormant," were merged into one category now reported as "assumed leaker." See reference (f) for explanation of when, how long, and how fast some of the tanks leaked. It is highly likely that there have been undetected leaks from single-shell tanks because of the nature of their design and instrumentation.

TABLE H-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 3 of 5)

(4) The leak volume estimate date for these tanks is before the "declared leaker" date because the tank was in a "suspected leaker" or "questionable integrity" status; however, a leak volume had been estimated prior to the tank being reclassified.

(5) The increasing radiation levels in drywells and laterals associated with these three tanks could be indicating continuing leak or movement of existing radionuclides in the soil. There is no conclusive way to confirm these observations.

(6) Methods were used to estimate the leak volumes from these 19 tanks based on the assumption that their cumulative leakage is approximately the same as for 18 of the 24 tanks identified in footnote (9). For more details see reference (g). The total leak volume estimate for these tanks is 150 Kgallons (rounded to the nearest Kgallons), for an average of approximately 8 Kgallons for each of 19 tanks.

(7) The total has been rounded to the nearest 50 Kgallons. Upper bound values were used in many cases in developing these estimates. It is likely that some of these tanks have not actually leaked.

(8) Leak volume estimate is based solely on observed liquid level decreases in these tanks. This is considered to be the most accurate method for estimating leak volumes.

(9) The curie content shown is as listed in the reference document and is not decayed to a consistent date: therefore, a cumulative total is inappropriate.

(10) Tank 241-C-101 experienced a liquid level decrease in the late 1960s and was taken out of service and pumped to a "minimum heel" in December 1969. In 1970, the tank was classified as a "questionable integrity" tank. Liquid level data show decreases in level throughout the 1970s and the tank was saltwell pumped during the 1970s, ending in April 1979. The tank was reclassified as a "confirmed leaker" in January 1980. See references (q) and (s); refer to reference (s) for information on the potential for there to have been leaks from other C-farm tanks (specifically, C-102, C-103, and C-109).

(11) These dates indicate when the tanks were declared to be interim stabilized. In some cases, the official interim stabilization documents were issued at a later date. Also, in some cases, the field work associated with interim stabilization was completed at an earlier date.

(12) Tank T-111 was declared an assumed re-leaker on February 28, 1994, due to a decreasing trend in surface level measurement. This tank was pumped, and interim stabilization completed on February 22, 1995.

(13) Tank BX-111 was declared an assumed re-leaker in April 1993. Preparations for pumping were delayed, following an administrative hold placed on all tank farm operations in August 1993. Pumping resumed and the tank was declared interim stabilized on March 15, 1995.

(14) The leak volume and curie release estimates on SX-108, SX-109, SX-111, and SX-112 have been re-evaluated using a Historical Leak Model [see reference (u)]. In general, the model estimates are much higher than the values listed in the table, both for volume and curies released. The values listed in the table do not reflect this revised estimate because, "In particular, it is worth emphasizing that this report was never meant to be a definitive update for the leak baseline at the Hanford Site. It was rather meant to be an attempt to view the issue of leak inventories with a new and different methodology." (This quote is from the first page of the referenced report).

TABLE H-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 4 of 5)

References:

(a) Murthy, K.S., et al, June 1983, *Assessment of Single-Shell Tank Residual Liquid Issues at Hanford Site, Washington*, PNL-4688, Pacific Northwest Laboratory, Richland, Washington.

(b) WHC, 1991a, *Tank 241-A-105 Leak Assessment*, WHC-MR-0264, Westinghouse Hanford Company, Richland, Washington.

(c) WHC, 1991b, *Tank 241-A-105 Evaporation Estimate 1970 Through 1978*, WHC-EP-0410, Westinghouse Hanford Company, Richland, Washington.

(d) Smith, D. A., January 1986, *Single-Shell Tank Isolation Safety Analysis Report*, SD-WM-SAR-006, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

(e) McCann, D. C., and T. S. Vail, September 1984, *Waste Status Summary*, RHO-RE-SR-14, Rockwell Hanford Operations, Richland, Washington.

(f) Catlin, R. J., March 1980, *Assessment of the Surveillance Program of the High-Level Waste Storage Tanks at Hanford*, Hanford Engineering Development Laboratory, Richland, Washington.

(g) Baumhardt, R. J., May 15, 1989, Letter to R. E. Gerton, U.S. Department of Energy-Richland Operations Office, *Single-Shell Tank Leak Volumes*, 8901832B R1, Westinghouse Hanford Company, Richland, Washington.

(h) WHC, 1990a, Occurrence Report, *Surface Level Measurement Decrease in Single-Shell Tank 241-AX-102*, WHC-UO-89-023-TF-05, Westinghouse Hanford Company, Richland, Washington.

(i) Groth, D. R., July 1, 1987, Internal Memorandum to R. J. Baumhardt, *Liquid Level Losses in Tanks 241-C-201, -202 and -204*, 65950-87-517, Westinghouse Hanford Company, Richland, Washington.

(j) Groth, D. R. and G. C. Owens, May 15, 1987, Internal Memorandum to J. H. Roecker, *Tank 103-A Integrity Evaluation*, Westinghouse Hanford Company, Richland, Washington.

(k) Campbell, G. D., July 8, 1988, Internal Memorandum to R. K. Welty, *Engineering Investigation: Interstitial Liquid Level Decrease in Tank 241-SX-104*, 13331-88-416, Westinghouse Hanford Company, Richland, Washington.

(l) ERDA, 1975, *Final Environmental Statement Waste Management Operations, Hanford Reservation, Richland, Washington*, ERDA-1538, 2 vols., U.S. Energy Research and Development Administration, Washington, D.C.

(m) WHC, 1992a, *Tank 241-SX-108 Leak Assessment*, WHC-MR-0300, Westinghouse Hanford Company, Richland, Washington.

(n) WHC, 1992b, *Tank 241-SX-109 Leak Assessment*, WHC-MR-0301, Westinghouse Hanford Company, Richland, Washington.

(o) WHC, 1992c, *Tank 241-SX-115 Leak Assessment*, WHC-MR-0302, Westinghouse Hanford Company, Richland, Washington.

TABLE H-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 5 of 5)

(p) WHC, 1992d, Occurrence Report, *Apparent Decrease in Liquid Level in Single Shell Underground Storage Tank 241-T-101, Leak Suspected; Investigation Continuing*, RL-WHC-TANKFARM-1992-0073, Westinghouse Hanford Company, Richland, Washington.

(q) WHC,1990b, *A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington.

(r) WHC, 1993a, *Assessment of Unsaturated Zone Radionuclide Contamination Around Single-Shell Tanks 241-C-105 and 241-C-106, WHC-SD-EN-TI-185*, REV OA, Westinghouse Hanford Company, Richland, Washington.

(s) WHC, 1994, Occurrence Report, *Apparent Liquid Level Decrease in Single Shell Underground Storage Tank 241-T-111; Declared an Assumed Re-Leaker*, RL-WHC-TANKFARM-1994-0009, Westinghouse Hanford Company, Richland, Washington.

(t) HNF, 1998, Agnew, S. F. and R. A. Corbin, August 1998, *Analysis of SX Farm Leak Histories - Historical Leak Model*, (HLM), HNF-3233, Rev. 0, Los Alamos National Laboratory, Los Alamos, New Mexico

APPENDIX I

INTERIM STABILIZATION STATUS
CONTROLLED, CLEAN, AND STABLE STATUS

TABLE I-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS (Sheet 1 of 3)

November 30, 1999

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
A-101	SOUND	N/A		C-101	ASMD LKR	11/83	AR	T-108	ASMD LKR	11/78	AR
A-102	SOUND	08/89	SN	C-102	SOUND	09/95	JET	T-109	ASMD LKR	12/84	AR
A-103	ASMD LKR	06/88	AR	C-103	SOUND	N/A		T-110	SOUND	N/A	
A-104	ASMD LKR	09/78	AR	C-104	SOUND	09/89	SN	T-111	ASMD LKR	02/95	JET
A-105	ASMD LKR	07/79	AR	C-105	SOUND	10/95	AR	T-112	SOUND	03/81	AR(2)(3)
A-106	SOUND	08/82	AR	C-106	SOUND	N/A		T-201	SOUND	04/81	AR (3)
AX-101	SOUND	N/A		C-107	SOUND	09/85	JET	T-202	SOUND	08/81	AR
AX-102	ASMD LKR	09/88	SN	C-108	SOUND	03/84	AR	T-203	SOUND	04/81	AR
AX-103	SOUND	08/87	AR	C-109	SOUND	11/83	AR	T-204	SOUND	08/81	AR
AX-104	ASMD LKR	08/81	AR	C-110	ASMD LKR	05/95	JET	TX-101	SOUND	02/84	AR
B-101	ASMD IKR	03/81	SN	C-111	ASMD LKR	03/84	SN	TX-102	SOUND	04/83	JET
B-102	SOUND	08/85	SN	C-112	SOUND	09/90	AR	TX-103	SOUND	08/83	JET
B-103	ASMD IKR	02/85	SN	C-201	ASMD LKR	03/82	AR	TX-104	SOUND	09/79	SN
B-104	SOUND	06/85	SN(2)	C-202	ASMD LKR	08/81	AR	TX-105	ASMD LKR	04/83	JET
B-105	ASMD IKR	12/84	AR	C-203	ASMD LKR	03/82	AR	TX-106	SOUND	06/83	JET
B-106	SOUND	03/85	SN	C-204	ASMD LKR	09/82	AR	TX-107	ASMD LKR	10/79	AR
B-107	ASMD LKR	03/85	SN	S-101	SOUND	N/A		TX-108	SOUND	03/83	JET
B-108	SOUND	05/85	SN	S-102	SOUND	N/A		TX-109	SOUND	04/83	JET
B-109	SOUND	04/85	SN	S-103	SOUND	N/A		TX-110	ASMD LKR	04/83	JET
B-110	ASMD LKR	12/84	AR(2)	S-104	ASMD LKR	12/84	AR	TX-111	SOUND	04/83	JET
B-111	ASMD LKR	06/85	SN)2)	S-105	SOUND	09/88	JET	TX-112	SOUND	04/83	JET
B-112	ASMD LKR	05/86	SN	S-106	SOUND	N/A		TX-113	ASMD LKR	04/83	JET
B-201	ASMD LKR	08/81	AR (3)	S-107	SOUND	N/A		TX-114	ASMD LKR	04/83	JET
B-202	SOUND	05/85	AR(2)	S-108	SOUND	12/96	JET	TX-115	ASMD LKR	09/83	JET
B-203	ASMD LKR	06/84	AR	S-109	SOUND	N/A		TX-116	ASMD LKR	04/83	JET
B-204	ASMD LKR	06/84	AR	S-110	SOUND	01/97	JET	TX-117	ASMD LKR	03/83	JET
BX-101	ASMD LKR	09/78	AR	S-111	SOUND	N/A		TX-118	SOUND	04/83	JET
BX-102	ASMD LKR	11/78	AR	S-112	SOUND	N/A		TY-101	ASMD LKR	04/83	JET
BX-103	SOUND	11/83	AR(2)	SX-101	SOUND	N/A		TY-102	SOUND	09/79	AR
BX-104	SOUND	09/89	SN	SX-102	SOUND	N/A		TY-103	ASMD LKR	02/83	JET
BX-105	SOUND	03/81	SN	SX-103	SOUND	N/A		TY-104	ASMD LKR	11/83	AR
BX-106	SOUND	07/95	SN	SX-104	ASMD LKR	N/A		TY-105	ASMD LKR	02/83	JET
BX-107	SOUND	09/90	JET	SX-105	SOUND	N/A		TY-106	ASMD LKR	11/78	AR
BX-108	ASMD LKR	07/79	SN	SX-106	SOUND	N/A		U-101	ASMD LKR	09/79	AR
BX-109	SOUND	09/90	JET	SX-107	ASMD LKR	10/79	AR	U-102	SOUND	N/A	
BX-110	ASMD LKR	08/85	SN	SX-108	ASMD LKR	08/79	AR	U-103	SOUND	N/A	
BX-111	ASMD LKR	03/95	JET	SX-109	ASMD LKR	05/81	AR	U-104	ASMD LKR	10/78	AR
BX-112	SOUND	09/90	JET	SX-110	ASMD LKR	08/79	AR	U-105	SOUND	N/A	
BY-101	SOUND	06/84	JET	SX-111	ASMD LKR	07/79	SN	U-106	SOUND	N/A	
BY-102	SOUND	04/95	JET	SX-112	ASMD LKR	07/79	AR	U-107	SOUND	N/A	
BY-103	ASMD LKR	11/97	JET	SX-113	ASMD LKR	11/78	AR	U-108	SOUND	N/A	
BY-104	SOUND	01/85	JET	SX-114	ASMD LKR	07/79	AR	U-109	SOUND	N/A	
BY-105	ASMD LKR	N/A		SX-115	ASMD LKR	09/78	AR	U-110	ASMD LKR	12/84	AR
BY-106	ASMD LKR	N/A		T-101	ASMD LKR	04/93	SN	U-111	SOUND	N/A	
BY-107	ASMD LKR	07/79	JET	T-102	SOUND	03/81	AR(2)(3)	U-112	ASMD LKR	09/79	AR
BY-108	ASMD LKR	02/85	JET	T-103	ASMD LKR	11/83	AR	U-201	SOUND	08/79	AR
BY-109	SOUND	07/97	JET	T-104	SOUND	11/99(4)	JET	U-202	SOUND	08/79	SN
BY-110	SOUND	01/85	JET	T-105	SOUND	06/87	AR	U-203	SOUND	08/79	AR
BY-111	SOUND	01/85	JET	T-106	ASMD LKR	08/81	AR	U-204	SOUND	08/79	SN
BY-112	SOUND	06/84	JET	T-107	ASMD LKR	05/96	JET				

LEGEND:

AR = Administratively interim stabilized
JET = Saltwell jet pumped to remove drainable interstitial liquid
SN = Supernate pumped (Non-Jet pumped)
N/A = Not yet interim stabilized
ASMD LKR = Assumed Leaker

Interim Stabilized Tanks	120
Not Yet Interim Stabilized	29
Total Single-Shell Tanks	149

TABLE I-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS
(sheet 2 of 2)

Footnotes:

(1) These dates indicate when the tanks were actually interim stabilized. In some cases, the official interim stabilization documents were issued at a later date.

(2) Although tanks BX-103, T-102 and T-112 met the interim stabilization administrative procedure at the time they were stabilized, they no longer meet the recently updated administrative procedure. The tanks were re-evaluated in 1996 and memo 9654456, J. H. Wicks to Dr. J. K. McClusky, DOE-RL, dated September 1996, was issued which recommended that no further pumping be performed on these tanks, based on an economic evaluation.

An intrusion investigation was completed on tank B-202 in 1996 because of a detected increase in surface level. As a result of this investigation, it was determined that this tank no longer meets the recently updated administrative procedure for 200 series tanks.

(3) Original Interim Stabilization data are missing on four tanks: B-201, T-102, T-112, and T-201.

(4) Tank 241-T-104 was Interim Stabilized on November 19, 1999. In-tank video taken October 7, 1999, shows the surface is clearly sludge-type waste with no saltcake present. No visible water on surface. Waste surface appears level across tank with numerous cracks. There is a minimal collapsed area around the saltwell screen, with no visible bottom.

TABLE I-2. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES

November 30, 1999
(sheet 1 of 2)

New single-shell tank interim stabilization milestones were negotiated in 1999 and are identified in the "Consent Decree." The Consent Decree was approved on August 16, 1999.

CONSENT DECREE
Attachments A-1 and A-2

Following is the schedule for pumping liquid waste from the remaining twenty-nine (29) single-shell tanks. This schedule is enforceable pursuant to the terms of the Decree except for the "Project Pumping Completion Dates" which are estimates only and not enforceable.

Tank Designation		Pumping Initiated	Projected Pumping Completion Date
1.	T-104	Already initiated	May 30, 1999
2.	T-110	Already initiated	May 30, 1999
3.	SX-104	Already initiated	December 30, 2000
4.	SX-106	Already initiated	December 30, 2000
5.	S-102	Already initiated	March 30, 2001
6.	S-106	Already initiated	March 30, 2001
7.	S-103	Already initiated	March 30, 2001
8.	U-103*	September 26, 1999 (8 months ahead of schedule)	April 15, 2002
9.	U-105*	June 15, 2000	April 15, 2002
10.	U-102*	June 15, 2000	April 15, 2002
11.	U-109*	June 15, 2000	April 15, 2002
12.	A-101	October 30, 2000	September 30, 2003
13.	AX-101	October 30, 2000	September 30, 2003
14.	SX-105	March 15, 2001	February 28, 2003
15.	SX-103	March 15, 2001	February 28, 2003
16.	SX-101	March 15, 2001	February 28, 2003
17.	U-106*	March 15, 2001	February 28, 2003
18.	BY-106	July 15, 2001	June 30, 2003
19.	BY-105	July 15, 2001	June 30, 2003
20.	U-108	December 30, 2001	August 30, 2003
21.	U-107	December 30, 2001	August 30, 2003
22.	S-111	December 30, 2001	August 30, 2003
23.	SX-102	December 30, 2001	August 30, 2003
24.	U-111	November 30, 2002	September 30, 2003
25.	S-109	November 30, 2002	September 30, 2003
26.	S-112	November 30, 2002	September 30, 2003
27.	S-101	November 30, 2002	September 30, 2003
28.	S-107	November 30, 2002	September 30, 2003
29.	C-103	No later than December 30, 2000, DOE will determine whether the organic layer and pumpable liquids will be pumped from Tank C-103 together or separately, and will establish a deadline for initiating pumping of this tank. The parties will incorporate the initiation deadline into this schedule as provided in Section VI of the Decree.	

* Tanks containing organic complexants.

TABLE I-2. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES
(sheet 2 of 2)

Completion of Interim Stabilization. DOE will complete interim stabilization of all 29 single-shell tanks listed above by September 30, 2004.

Percentage of Pumpable Liquid Remaining to be Removed.

93% of Total Liquid	9/30/1999
38% of Organic Complexed Pumpable Liquids	9/30/2000
5% of Organic Complexed Pumpable Liquids	9/30/2001
18% of Total Liquid	9/30/2002
2% of Total Liquid	9/30/2003

The "percentage of pumpable liquid remaining to be removed" is calculated by dividing the volume of pumpable liquid remaining to be removed from tanks not yet interim stabilized by the sum of the total amount of liquid that has been pumped and the pumpable liquid that remains to be pumped from all tanks.

TABLE I-3. SINGLE-SHELL TANKS STABILIZATION STATUS SUMMARY

November 30, 1999

Partial Interim Isolated (PI)

EAST AREA
A-101
A-102
AX-101
BY-102
BY-103
BY-105
BY-106
BY-109
C-103
C-105
C-106
East Area 11

WEST AREA
S-101
S-102
S-103
S-106
S-107
S-108
S-109
S-110
S-111
S-112
SX-101
SX-102
SX-103
SX-104
SX-105
SX-106
T-101
T-104
T-107
T-110
T-111
U-102
U-103
U-105
U-106
U-107
U-108
U-109
U-110
U-111
West Area 29
Total 40

Intrusion Prevention Completed (IP)

EAST AREA
A-103
A-104
A-105
A-106
AX-102
AX-103
AX-104
B-FARM - 16 tanks
BX-FARM - 12 tanks
BY-101
BY-104
BY-107
BY-108
BY-110
BY-111
BY-112
C-101
C-102
C-104
C-107
C-108
C-109
C-110
C-111
C-112
C-201
C-202
C-203
C-204
East Area 55

WEST AREA
S-104
S-105
SX-107
SX-108
SX-109
SX-110
SX-111
SX-112
SX-113
SX-114
SX-115
T-102
T-103
T-105
T-106
T-108
T-109
T-112
T-201
T-202
T-203
T-204
TX-FARM - 18 tanks
TY-FARM - 6 tanks
U-101
U-104
U-112
U-102
U-202
U-203
U-204
West Area 53
Total 108

Controlled, Clean, and Stable (CCS)

EAST AREA	WEST AREA
BX-FARM - 12 Tanks	TX-FARM - 18 tanks
	TY FARM - 6 tanks
East Area 12	West Area 24
	Total 36

Note: CCS activities have been deferred until funding is available.

Interim Stabilized (IS)

EAST AREA
A-102
A-103
A-104
A-105
A-106
AX-102
AX-103
AX-104
B-FARM - 16 tanks
BX-FARM - 12 tanks
BY-101
BY-102
BY-103
BY-104
BY-107
BY-108
BY-109
BY-110
BY-111
BY-112
C-101
C-102
C-104
C-105
C-107
C-108
C-109
C-110
C-111
C-112
C-201
C-202
C-203
C-204
East Area 60

WEST AREA
S-104
S-105
S-108
S-110
SX-107
SX-108
SX-109
SX-110
SX-111
SX-112
SX-113
SX-114
SX-115
T-101
T-102
T-103
T-104
T-105
T-106
T-107
T-108
T-109
T-111
T-112
T-201
T-202
T-203
T-204
TX-FARM - 18 tanks
TY-FARM - 6 tanks
U-101
U-104
U-110
U-112
U-201
U-202
U-203
U-204
West Area 60
Total 120

DISTRIBUTION

Number of copies

OFFSITE - USA

2 **Congress of the United States**
U. S. Senate
717 Hart Senate Building
Washington D.C. 20510

Senator Ron Wyden

U. S. House of Representatives
1323 Longworth House Office Building
Washington D. C. 20515

Representative Richard "Doc" Hastings, 4th District

5 **U. S. Department of Energy-Headquarters**
1000 Independence Avenue, SW
Washington, D. C. 20585

H. Calley	EM-38	Cloverleaf Bldg.
Kurt Juroff	EM-38	Cloverleaf Bldg.
William M. Levitan	EM-1	FORS/5A-014
Ralph Lightener	EM-38	Cloverleaf Bldg.

U. S. Department of Energy-Headquarters
19901 Germantown Rd
Germantown, MD 20874

Kenneth Lang	EM-38	Cloverleaf Building

1 **U. S. Nuclear Regulatory Commission**
Division of Fuel Cycle, Safeguards & Security
Mail Stop T8-A33
Washington, DC 20555

Robert Pierson, Chief FSPB/FCSS (ADDRESSEE ONLY)

2 **Washington State Department of Ecology**
Nuclear & Mixed Waste Management Program
P.O. Box 47600
Olympia, WA 98504-7600

Library

Washington State Department of Ecology
Nuclear Waste Program
300 Desmond Drive
Lacey, WA 98504

R. Stanley

1 **Washington State Department of Health**
Radiation Protection
7171 Cleanwater Lane
Box 47827
Olympia, WA 98504-7827

Ed Bricker

1 **Oregon State Department of Energy**
625 Marion St. NE, Suite 1
Salem, OR 97301

Dirk Dunning

1 **Oak Ridge National Laboratory**
P. O. Box 2008
Oak Ridge, TN 37831-6180

C. Forsberg MS-6180

1 **Los Alamos National Laboratory**
P. O. Box 1663
Los Alamos, NM 87545

1 **Sandia National Laboratories**
1515 Eubank, NE
P. O. Box 5800
Albuquerque, NM 87185

Scott Slezak, Organization 2161 MS 0716

1 Donald T. Oakley
9612 Hall Road
Potomac, MD 20854

1 **Foster-Miller, Inc.**
Power Systems Technology Group
350 Second Avenue
Waltham, MA 02451-1196

Maureen Williams

1 **National Research Council**
2101 Constitution Ave, N.W.
Washington D. C. 20418

Robert S. Andrews, Senior Staff Officer, MS HA456

1 **Government Accountability Project**
West Coast Office
1402 Third Avenue, Suite 1215
Seattle, WA 98101

Thomas E. Carpenter, Director

1 **Nuclear Systems Associates, Inc. (NSA)**
2741 Saturn Street
Brea, CA 92821

Charles Divona

1 **MACTEC**
8310 Centerbrook Place
Alexandra, VA 22308

Stan Blacker, Vice President

TRI-CITIES:

1 **Foster Wheeler Environmental Corp.**
3200 George Washington Way, Suite G
Richland, WA 99352

R. J. Roberts

1 **ARES Corporation**
636 Jadwin Ave., Suite B
Richland, WA 99352

1 **Babad Technical Services**
2540 Cordoba Court
Richland, WA 99352

1 **Vista Research, Inc.**
3000 George Washington Way, Suite 2C
Richland, WA 99352

Phil Ohl

1 **Wastren Inc.**
1050 Gilmore Ave, Suite C
Richland, WA 99352

Gary Dunford

1 R. K. Welty
409 S. 41st Ave
West Richland, WA 99353

ONSITE

1 **Bechtel Hanford, Inc.**
J. P. Shearer H0-20

2 **BAT**
R. T. Winward H6-60
J. L. Kovach H6-61

2 **MACTEC - Meier Associates, LLC**
J. D. Bingham R2-11
M. A.Kufahl R2-11

2	**MACTEC - ERS**	
	J. F. Bertsch	B1-42
	R. G. McCain	B1-42
1	**MACTEC**	
	W. J. Stokes	R2-89
1	**General Accounting Office**	
	C. R. Abraham	A1-80
1	**Washington State Department of Ecology**	
	Library	B5-18
1	**U. S. Environmental Protection Agency**	
	D. R. Sherwood	B5-01
17	**U. S. Department of Energy-Office of River Protection**	
	H. L. Boston	A7-50
	D. C. Bryson	H6-60
	J. M. Clark	H6-60
	J. J. Davis	H6-60
	R. G. Harwood	H6-60
	R. D. Hildebrand	A5-13
	D. H. Irby	H6-60
	C. Pacheco	H6-60
	T. E. Olds	A7-75
	S. H. Pfaff	H6-60
	M. L. Ramsay	H6-60
	M. J. Royack	H6-60
	J. S. Shuen	H6-60
	A. B. Sidpara	H6-60
	R. A. Stolberg	A4-81
	D. J. Williams	T6-03
	D. D. Wodrich	H6-60
	Reading Room	H2-53
9	**Pacific National Northwest Laboratories**	
	S. A. Bryan	P7-25
	J. A. Dirks	K8-17
	R. E. Gephart	K9-76
	S.A. Hartley	K5-12
	D.G. Horton	K6-81
	J. L. Huckaby	K7-15
	B. E. Opitz	K6-75
	R. D. Scheele	P7-25
	L. A. Smyser	H6-61
114	**CH2M Hill (CHG), and Affiliated Companies**	
	D. I. Allen	R2-50
	J. J. Badden	S5-07
	D. G. Baide	S5-05
	L. Bedford	R2-84
	T. M. Blaak	S5-13
	V. C. Boyles	R2-11
	P. J. Brackenbury	R3-73

J. M. Brinson-Wagner	S7-20
C. B. Bryan	R2-58
J. W. Cammann	R2-12
K. G. Carothers	R2-11
R. J. Cash	R1-44
W. L. Cowley	R1-44
C. Defigh-Price	R2-12
D. K. DeFord	S7-24
W. T. Dehn	H6-63
M. P. Delozier	H7-08
M. L. Dexter (12)	R1-51
W. T. Dixon	R3-01
R. A. Dodd	R3-72
A. C. Etheridge	H7-07
S. D. Estey	R2-11
J. E. Ferguson	H7-06
R. A. Flores	S8-09
L. A. Fort	R2-12
K. D. Fowler	R2-11
G. T. Frater	K9-46
J. R. Freeman-Pollard	R2-89
K. A. Gasper	H6-64
B. C. Gooding	T4-01
M. D. Guthrie	S6-74
D. B. Hagmann	R2-89
B. M. Hanlon (10)	T4-08
G. N. Hanson	T4-07
W.M. Harty Jr.	S5-13
D.C. Hedengren	R2-11
B. A. Higley	R3-73
K. M. Hodgson	R2-11
T. M. Hohl	R3-73
J. L. Homan	R3-72
H. R. Hopkins	R2-58
S. E. Hulsey	S7-86
M. N. Islam	R1-43
O. M. Jaka	S7-24
P. Jennings	R2-84
B.A. Johnson	S5-03
G. D. Johnson	R1-44
J. Kalia	R1-43
M. R. Kembel	S7-03
R. A. Kirkbride	R3-73
P. F. Kison	T4-07
N. W. Kirch	R2-11
J. S. Konyu	R4-04
J. G. Kristofzski	H6-62
M. J. Kupfer	R3-75
M. A. Lane	G3-12
C.E. Leach	R1-44
J. W. Lentsch	R3-25
G. T. MacLean	B1-70
D. J. McCain	R2-11
J. M. Morris	R2-84
M. A. Payne	R2-58
C. Oldham	H6-60
R. E. Pohto	R2-84
R. E. Raymond (2)	S7-70

D. S. Rewinkel	S7-83
C. J. Rice	R2-53
W. E. Ross	R2-50
D. J. Saueressig	S7-20
J. S. Schofield	S7-12
R. E. Schreiber	B2-05
N. J. Scott-Proctor	S5-01
M. L. Sheriff	S5-07
D. H. Shuford	R1-56
S. G. Smith	L6-37
J. N. Strode	R2-11
R. R. Thompson	R2-12
D. T. Vladimiroff	S7-20
J. A. Voogd	H6-64
A. E. Young (6)	R1-10
F. A. Zak	S7-34
Central Files	B1-07
200 West Shift Office	T4-00
200 East Shift Office	S5-04
Environmental Data Mgmt Center (2)	H6-08
Unified Dose Assessment Center (UDAC)	A0-20
Document Processing Center	A3-94